Kelliher, Joseph

b5

From: Anderson, Margot
Sent: Monday, March 26, 2001 2:07 PM
To: Kelliher, Joseph
Subject: FW: q from Joe Kelliher

To answer your question on refineries.....

-----Original Message-----
From: Breed, William
Sent: Monday, March 26, 2001 2:01 PM
To: Anderson, Margot
Subject: FW: q from Joe Kelliher

Margot

-----Original Message-----
From: White, Thomas
Sent: Monday, March 26, 2001 1:48 PM
To: Breed, William; McNutt, Barry
Subject: RE: q from Joe Kelliher

Hope this helps,
Tom

19886

DOE021-0340

Kelliher, Joseph WH b5

From: Karen_Y._Knutson@ovp.eop.gov%internet [Karen_Y._Knutson@ovp.eop.gov]
Sent: Thursday, April 19, 2001 8:46 AM
To: Kelliher, Joseph; Cesar_Conda@ovp.eop.gov%internet; Andrew_D._Lundquist@ovp.eop.gov%internet
Subject: RE: IDEA

268

---------- Forwarded by Karen Y. Knutson/OVP/EOP on 04/19/2001 08:45 AM ----------

(Embedded image moved to file: PIC22624.PCX)

"Kelliher, Joseph" <Joseph.Kelliher@hq.doe.gov>
04/18/2001 06:07:15 PM

Record Type: Record

To: Karen Y. Knutson/OVP/EOP

cc:
Subject: RE: IDEA

seize the oil? Is there some model the proponent points to?
-----Original Message-----
From: Karen_Y._Knutson@ovp.eop.gov%internet
[mailto:Karen_Y._Knutson@ovp.eop.gov]
Sent: Wednesday, April 18, 2001 2:45 PM
To: Kelliher, Joseph
Subject: IDEA

Joe - I would appreciate your help in getting some solid ideas of the proposal below. Thanks, Karen

Kelliher, Joseph

65

From: Karen_Y._Knutson@ovp.eop.gov%internet [Karen_Y._Knutson@ovp.eop.gov]
Sent: Wednesday, April 18, 2001 2:45 PM
To: Kelliher, Joseph
Subject: IDEA

Joe - I would appreciate your help in getting some solid ideas of the proposal below. This came from a high level source at the WH and I need to
get him feed back asap. Thanks, Karen

19889

WH

b5

Kelliher, Joseph

From: Karen_Y._Knutson@ovp.eop.gov%internet [Karen_Y._Knutson@ovp.eop.gov]
Sent: Monday, April 16, 2001 11:11 AM
To: Kelliher, Joseph; McSlarrow, Kyle
Subject: national goals

270

04/16/2001
11:09 AM ----------

John L. Howard Jr.
04/16/2001 10:38:44 AM

Record Type: Record

To: Karen Y. Knutson/OVP/EOP@EOP

cc:
Subject: national goals

19890

Kelliher, Joseph b5

From: Anderson, Margot
Sent: Monday, April 02, 2001 2:35 PM
To: Kolevar, Kevin; Kelliher, Joseph
Cc: Braitsch, Jay
Subject:

Joe and Kevin,

Margot

19891

Kelliher, Joseph

65

From: Kolevar, Kevin
Sent: Monday, April 02, 2001 3:33 PM
To: Anderson, Margot; Kelliher, Joseph
Cc: Braitsch, Jav
Subject:

-----Original Message-----
From: Anderson, Margot
Sent: Monday, April 02, 2001 2:35 PM
To: Kolevar, Kevin; Kelliher, Joseph
Cc: Braitsch, Jay
Subject: CO2 in the NEP

Joe and Kevin,

Margot

19892

Kelliher, Joseph bs

From: Kripowicz, Robert
Sent: Thursday, April 19, 2001 11:44 AM
To: Kelliher, Joseph
Subject: FW: SPR

Importance: High

Here is your answer.

Bob

-----Original Message-----
From: Furiga, Richard
Sent: Thursday, April 19, 2001 11:10 AM
To: Kripowicz, Robert
Subject: RE: SPR

-----Original Message-----
From: Kripowicz, Robert
Sent: Thursday, April 19, 2001 10:54 AM
To: Shages, John; Furiga, Richard
Subject: FW: SPR
Importance: High

I know most of the answers,but put a short q and a response together for me to send to Joe.

-----Original Message-----
From: Kelliher, Joseph
Sent: Thursday, April 19, 2001 8:57 AM
To: Kripowicz, Robert
Subject: SPR
Importance: High

19893

Kelliher, Joseph

b5

From: Kripowicz, Robert
Sent: Thursday, April 05, 2001 4:26 PM
To: Kelliher, Joseph
Subject: F

Bob

-----Original Message-----
From: Grahame, Thomas
Sent: Thursday, April 05, 2001 2:47 PM
To: Kripowicz, Robert
Cc: Rudins, George; Carter, Douglas
Subject: RR rates and regs, as they apply to coal power plants, possible recommendation

Bob: I have now spoken with Fred Davis at EEI and to Bob Szabo at Van Ness, Feldman, on this issue. Chuck Linderman suggested by yesterday's voice mail that I contact both in his absence.

and

19894

Tom

Kelliher, Joseph

From: Kripowicz, Robert
Sent: Monday, April 02, 2001 4:26 PM
To: Kelliher, Joseph
Cc: Rudins, George
Subject: FW

Importance: High

This is a little wordy but covers our general knowledge to date. I will have someone follow up on this tomorrow, not Wednesday ,with EEI.

Bob

-----Original Message-----
From: Grahame, Thomas
Sent: Monday, April 02, 2001 4:10 PM
To: Kripowicz, Robert
Cc: Rudins, George; Carter, Douglas
Subject: interim report on coal transportation issues
Importance: High

19896

DOE021-0350

Tom

19897

DOE021-0351

Kelliher, Joseph

b5

From: Magwood, William
Sent: Tuesday, May 22, 2001 5:55 PM
To: Kelliher, Joseph; Cook, Trevor
Subject: RE: reprocessing paper

Joe,

Let me know if you need further information.

WDM

-----Original Message-----
From: Kelliher, Joseph
Sent: Tuesday, May 22, 2001 1:50 PM
To: Cook, Trevor
Cc: Magwood, William
Subject: RE: reprocessing paper
Importance: High

-----Original Message-----
From: Cook, Trevor
Sent: Tuesday, May 22, 2001 9:21 AM
To: Kelliher, Joseph
Cc: Magwood, William
Subject: reprocessing paper
Importance: High

Joe,

Here is the paper, its just over a page.

Trevor.

<< File: ONE PAGER ON REPROCESSING.doc >>

-----Original Message-----
From: Kelliher, Joseph
Sent: Monday, May 21, 2001 3:15 PM
To: Magwood, William; Cook, Trevor
Subject: hearing prep: reprocessing

Thanks.

19898

Kelliher, Joseph 105

From: Magwood, William
Sent: Wednesday, March 28, 2001 4:36 PM
To: Kelliher, Joseph
Cc: Anderson, Margot; Cook, Trevor; Garrish, Ted; Kolevar, Kevin
Subject: Comments on National Energy Policy Task Forces initiatives

Importance: High

You will also soon receive these papers for your reference. Please call me or B-6 you have any questions.

19899

DOE021-0353

Kelliher, Joseph

65

From: MaryBeth Zimmerman
Sent: Monday, April 30, 2001 9:20 AM
To: Kelliher, Joseph
Cc: Sullivan, John; Campbell, Lynn; York, Michael; Baldwin, Sam; Steer, Randy; Mansueti, Lawrence; Haspel, Abe
Subject: Kelliher's follow-up questions

---------- Forwarded by MaryBeth Zimmerman/EE/DOE on 04/30/2001 09:13 AM ----------

Michael York
04/26/2001 04:58 PM

To: MaryBeth Zimmerman/EE/DOE@DOE, Lawrence Mansueti/EE/DOE@DOE, Randy Steer/EE/DOE@DOE, Sam Baldwin/EE/DOE@DOE
cc:

Subject: Kelliher's follow-up questions

A few questions:

Answer:

19900

Martin, Adrienne

From: Anderson, Margot
Sent: Wednesday, March 21, 2001 7:19 PM
To: 'Karen Knutson (E-mail)'
Subject: help

Thanks.

Margot

19901

DOE021-0355

Martin, Adrienne

From: Anderson, Margot
Sent: Thursday, March 22, 2001 11:29 AM
To: 'Charles_M._Smith@ovp.eop.gov%internet'
Subject: RE: New Chapter 10 - State Chapter

Charlie,

We just got a chapter last night. Is this different? We are still reviewing that one.

Margot

----Original Message----
From: Charles_M._Smith@ovp.eop.gov%internet
[mailto:Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, March 22, 2001 11:15 AM
To: Kelliher, Joseph; Anderson, Margot; Kmurphy@osec.doc.gov%internet;
Dina.Ellis@do.treas.gov%internet;
Sue_Ellen_Wooldridge@IOS.DOI.gov%internet;
Joel_D._Kaplan@who.eop.gov%internet; Keith.Collins@USDA.gov%internet;
Joseph.Glauber@USDA.gov%internet; Michelle.Poche@OST.DOT.Gov%internet;
Patricia.Stahlschmidt@FEMA.gov%internet; Brenner.Rob@EPA.gov%internet;
Symons.Jeremy@EPA.gov%internet; Beale.John@EPA.gov%internet;
MPeacock@omb.eop.gov%internet; Mark_A._Weatherly@omb.eop.gov%internet;
Robert_C._McNally@opd.eop.gov%internet; Jhowardj@ceq.eop.gov%internet;
William_bettenberg@IOS.DOI.gov%internet;
Tom_fulton@IOS.DOI.gov%internet; Mleblanc@ceq.eop.gov%internet;
Bruce.Baughman@FEMA.gov%internet;
Charles.m.Hess@USACE.army.mil%internet; akeeler@cea.eop.gov%internet;
commcoll@aol.com%internet; Karen_E._Keller@omb.eop.gov%internet;
Carol_J._Thompson@who.eop.gov%internet;
Sandra_L._Via@omb.eop.gov%internet; Megan_D._Moran@ovp.eop.gov%internet;
Janet_P._Walker@opd.eop.gov%internet;
Ronald_L._Silberman@omb.eop.gov%internet;
Lori_A._Krauss@omb.eop.gov%internet;
Charles_D._McGrath_Jr@ovp.eop.gov%internet;
Robert_C._McNally@oa.eop.gov%internet;
Margaret_Bradley@IOS.DOI.gov%internet
Cc: Andrew_D._Lundquist@ovp.eop.gov%internet;
Karen_Y._Knutson@ovp.eop.gov%internet; John_Fenzel@ovp.eop.gov%internet
Subject: New Chapter 10 - State Chapter

Attached

(See attached file: 03_20_01_NEPG Study_R2.doc)

19902

Release

Martin, Adrienne

081

From:	Anderson, Margot
Sent:	Thursday, March 01, 2001 7:51 AM
To:	Cook, Trevor; Scalingi, Paula; PETTIS, LARRY; KENDELL, JAMES; Zimmerman, MaryBeth; Sullivan, John; 'jkstier@bpa.gov'; Kripowicz, Robert; Haspel, Abe; Magwood, William; 'jkstier@bpa.gov'; Whatley, Michael; Braitsch, Jay; Conti, John; Carter, Douglas; KYDES, ANDY; Pumphrey, David; Hart, James; KYDES, ANDY; Breed, William; Conti, John
Cc:	Kelliher, Joseph
Subject:	Energy Policy Discussion

All,

On Monday at 1:00, we will be meeting in room 7B-040 to begin the discussion of energy policy options for the national energy policy (phase 2 of our efforts). Joe will be sending out guidance for our discussion (problably on Friday). We have been encouraged by the Task Force to think broadly and creatively about policy options. Tha Task Force is aiming for March 14 to complete this phase.

Again, thank you all for your extreme efforts over the last two weeks and extra thanks to those who provided the last round of comments on the 2/26 version. We are very close to buttoning up the "interim report" - the two chapters describing the issues that we have been working on. Special kudos to EIA for their patience on all the fact checking (it ain't over - I'll be calling for some graphic help later today).

Margot

19903

DOE021-0357

Martin, Adrienne

From: Anderson, Margot
Sent: Thursday, March 22, 2001 3:08 PM
To: 'William_Bettenberg@ios.doi.gov%internet'
Subject: RE: help

3-6

Try Andy Kydes He knows everybody there.

----Original Message----
From: William_Bettenberg@ios.doi.gov%internet
[mailto:William_Bettenberg@ios.doi.gov]
Sent: Thursday, March 22, 2001 3:07 PM
To: Anderson, Margot
Subject: Re: help

Margot -- Do you have a name for someone I could talk to in EIA

-Bill

19904

DOE021-0358

(b)(5)

583

Martin, Adrienne

From: Anderson, Margot
Sent: Thursday, March 22, 2001 6:06 PM
To: Conti, John; Haspel, Abe; Zimmerman, MaryBeth; Lockwood, Andrea; Breed, William; KYDES, ANDY; Whatley, Michael; Carter, Douglas; Braitsch, Jay; Melchert. Elena; Cook, Trevor; Breed. William; 'jkstier@bpa.gov'; York. Michael; Freitas, Christopher; Friedrichs, Mark; Pumphrey, David; Kolevar, Kevin
Cc: Kelliher, Joseph
Subject: NEP Update, Thursday 3/22

All (Joe K. - you can use for meeting tomorrow).

Thank you all very much!

Margot

19905

DOE021-0359

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 8:00 AM
To: Zimmerman, MaryBeth
Cc: Garland, Buddy; Sullivan, John; Haspel, Abe; Baldwin, Sam
Subject: RE: Ch. 6 -efficiency

Thanks. Feed what you can when you finish.

Margot

-----Orginal Message-----
From: MaryBeth Zimmerman
Sent: Thursday, March 22, 2001 7:26 PM
To: Anderson, Margot
Cc: Garland, Buddy; Sullivan, John; Haspel, Abe; Baldwin, Sam
Subject: Ch. 6 -efficiency

here are your responses to comments on Chapter 6, plus the power point graphics to accompany. We might be able to update the transportation graphic for you

<< File: Ch 6 (efficiency) graphics.ppt >> << File: ch 6 march 22 EE datachecks.doc >>

19906

DOE021-0360

Martin, Adrienne

Release

385

From: Anderson, Margot
Sent: Friday, March 23, 2001 8:04 AM
To: 'Ball, Crystal A - KN-DC'; Carrier, Paul
Cc: 'Stier, Jeffrey K - KN-DC'; 'Seifert, Roger - KN-DC'
Subject: RE: BPA DSI information

Thanks!

-----Original Message-----
From: Ball, Crystal A - KN-DC [mailto:caball@bpa.gov]
Sent: Thursday, March 22, 2001 6:18 PM
To: Anderson, Margot; Carrier, Paul
Cc: Stier, Jeffrey K - KN-DC; Seifert, Roger - KN-DC
Subject: BPA DSI information

Attached is the one-page summary you requested. I've also attached a few press releases issued when the remarketing/curtailment agreements were announced. I hope this helps answer your questions. Please let us know how you use this information and contact me if you need more. Thanks!

Crystal

<<DSI paul info.doc>> <<Alcoa deal pr.doc>> <<Golden PR.doc>> <<McCook pr final.doc>>

19907

(b)(5)

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 8:08 AM
To: Braitsch, Jay
Cc: Kripowicz, Robert; DeHoratiis, Guido; Johnson, Nancy; Melchert, Elena; Rudins, George; Carter, Douglas; Juckett, Donald
Subject: RE: NEP Chapter 8 – Supply

All,

Thanks much. This looks good. Any way I could get the graphics today? If I could turn this whole package over to the Task Force this afternoon, I would be most happy. Please let me know what your time frame is.

Margot

-----Original Message-----
From: Braitsch, Jay
Sent: Thursday, March 22, 2001 6:21 PM
To: Anderson, Margot
Cc: Kripowicz, Robert; DeHoratiis, Guido; Johnson, Nancy; Melchert, Elena; Rudins, George; Carter, Douglas; Juckett, Donald
Subject: NEP Chapter 8 – Supply
Importance: High

Margo – I'll be out until next Tuesday but the above people can respond to whatever.

<< File: ch 8 march 22.doc >>

19908

DOE021-0362

Martin, Adrienne

DOE

From: Anderson, Margot
Sent: Friday, March 23, 2001 11:02 AM
To: York, Michael
Cc: Zimmerman, MaryBeth
Subject: yet another request

I am afraid to call..... but do you guys have a handy-dandy graphic that illustrates all your

19909

DOE021-0363

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 11:29 AM
To: 'Symons.Jeremy@epamail.epa.gov%internet'
Subject: RE: chapter 6

Jeremy,

Margot
-----Original Message-----
From: Symons.Jeremy@epamail.epa.gov%internet
[mailto:Symons.Jeremy@epamail.epa.gov]
Sent: Monday, March 05, 2001 5:36 PM
To: Anderson, Margot
Subject: chapter 6

Margot,

It should include them all in one document, so please use this instead. Thanks.

Jeremy Symons
EPA, Office of Air and Radiation
(202) 564-9301
Fax: (202) 501-0394

---- Forwarded by Jeremy Symons/DC/USEPA/US on 03/05/2001 05:34 PM ----

Kathleen Hogan
03/05/2001 05:27 PM

To: Jeremy Symons/DC/USEPA/US@EPA
cc:
Subject: chapter 6

sorry

here is another version

19910

DOE021-0364

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 11:52 AM
To: Carter, Douglas
Cc: Melchert, Elena; Braitsch, Jay; Kripowicz, Robert
Subject: RE: Chapter 8

Doug,

Thanks. Please make sure you coordinate with Elena. She is bird-dogging this today. Yesterday's version is not complete yet so getting your edits in should be not problem but Elena holds the pen.

Margot

-----Original Message-----
From: Carter, Douglas
Sent: Friday, March 23, 2001 11:41 AM
To: Anderson, Margot
Cc: Melchert, Elena; Braitsch, Jay; Kripowicz, Robert
Subject: Chapter 8

Margo -

<< File: ch 8 march 23.doc >>

Doug Carter (FE-26)
US DOE
Washington, DC 20585

[This email uses 100% recycled electrons.]

19911

(b)(6)

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 8:11 AM
To: Melchert, Elena
Cc: DeHoratiis, Guido
Subject: RE: NEP Chapter 8 – Supply

Great, thanks.

—Original Message—
From: Melchert, Elena
Sent: Friday, March 23, 2001 8:09 AM
To: Anderson, Margot
Cc: DeHoratiis, Guido
Subject: RE: NEP Chapter 8 – Supply

Yes we can get some graphics this morning.
Elena

—Original Message—
From: Anderson, Margot
Sent: Friday, March 23, 2001 8:08 AM
To: Braitsch, Jay
Cc: Knpowicz, Robert; DeHoratiis, Guido; Johnson, Nancy; Melchert, Elena; Rudins, George; Carter, Douglas; Juckett, Donald
Subject: RE: NEP Chapter 8 – Supply

All,

Thanks much. This looks good. Any way I could get the graphics today? If I could turn this whole package over to the Task Force this afternoon, I would be most happy. Please let me know what your time frame is.

Margot

---Original Message---
From: Braitsch, Jay
Sent: Thursday, March 22, 2001 6:21 PM
To: Anderson, Margot
Cc: Knpowicz, Robert; DeHoratiis, Guido; Johnson, Nancy; Melchert, Elena; Rudins, George; Carter, Douglas; Juckett, Donald
Subject: NEP Chapter 8 -- Supply
Importance: High

Margo – I'll be out until next Tuesday but the above people can respond to whatever.

<< File: ch 8 march 22.doc >>

19912

DOE021-0366

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 12:15 PM
To: Melchert, Elena
Cc: Carter, Douglas
Subject: RE: Chapter 8

okay.sounds good.

-----Original Message-----
From: Melchert, Elena
Sent: Friday, March 23, 2001 11:57 AM
To: Anderson, Margot
Cc: Carter, Douglas
Subject: RE: Chapter 8

Margot: Doug and I have connected and I'm incorporating his edits into the final Fossil version. Thanks for your patience.
Elena

-----Original Message-----
From: Anderson, Margot
Sent: Friday, March 23, 2001 11:52 AM
To: Carter, Douglas
Cc: Melchert, Elena; Braitsch, Jay; Kripowicz, Robert
Subject: RE: Chapter 8

Doug,

Thanks. Please make sure you coordinate with Elena. She is bird-dogging this today. Yesterday's version is not complete yet so getting your edits in should be not problem but Elena holds the pen.

Margot

-----Original Message-----
From: Carter, Douglas
Sent: Friday, March 23, 2001 11:41 AM
To: Anderson, Margot
Cc: Melchert, Elena; Braitsch, Jay; Kripowicz, Robert
Subject: Chapter 8

Margo -

<< File: ch 8 march 23.doc >>

Doug Carter (FE-26)
US DOE
Washington, DC 20585

[This email uses 100% recycled electrons.]

19913

Martin, Adrienne

242

From: Anderson, Margot
Sent: Friday, March 23, 2001 1:12 PM
To: Melchert, Elena
Cc: DeHoratiis, Guido; Carter, Douglas
Subject: RE:

Thanks. I hate to ask, but do you have some nifty graphics?

-----Original Message-----
From: Melchert, Elena
Sent: Friday, March 23, 2001 1:08 PM
To: Anderson, Margot
Cc: DeHoratiis, Guido; Carter, Douglas
Subject:

Fossil Energy final Chapter 8
Thanks for your patience.
e << File: ch 8 march 23.doc >>

Elena Subia Melchert
Petroleum Engineer/Program Manager
Office of Fossil Energy
U.S. Department of Energy

19914

(b)(6)

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 1:28 PM
To: Cook, Trevor
Subject: RE:

Okay, I put them on the master list for Joe to review.

-----Original Message-----
From: Cook, Trevor
Sent: Friday, March 23, 2001 12:54 PM
To: Anderson, Margot
Subject: These are the remaining placeholders for the nuclear policy initiatives
Importance: High

Thanks for getting these in, we will have full papers on Tuesday, possibly Wednesday, but these convey the gist of our ideas.

<< File: Federal Site for commercial power.doc >> << File: MARKET DRIVE SPENT FUEL.doc >>

<< File: Direct Funding of NRC fees.doc >> << File: NUKE INFRASTRUCTURE SUPPORT.doc >>

<< File: Acclerated Deprecitation of Nuclear power.doc >> << File: CONSTRUCTABILITY POLICY.doc >>

y on

Trevor.

19915

(b)(6)

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 2:08 PM
To: Carter, Douglas; Melchert, Elena
Cc: DeHoratiis, Guido
Subject: RE:

I haven't checked your text yet. Is is clear where these go?

-----Original Message-----
From: Carter, Douglas
Sent: Friday, March 23, 2001 1:56 PM
To: Anderson, Margot; Melchert, Elena
Cc: DeHoratiis, Guido
Subject: RE:

Margot -

Attached is a powerpoint presentation with 5 slides which can be used with Chapter 8

Doug

<< File: Ch8 Elec Figs.ppt >>

-----Original Message-----
From: Anderson, Margot
Sent: Friday, March 23, 2001 1:12 PM
To: Melchert, Elena
Cc: DeHoratiis, Guido; Carter, Douglas
Subject: RE:

Thanks. I hate to ask, but do you have some nifty graphics?

-----Original Message-----
From: Melchert, Elena
Sent: Friday, March 23, 2001 1:08 PM
To: Anderson, Margot
Cc: DeHoratiis, Guido; Carter, Douglas
Subject:

Fossil Energy final Chapter 8
Thanks for your patience.
e << File: ch 8 march 23.doc >>

Elena Subia Melchert
Petroleum Engineer/Program Manager
Office of Fossil Energy
U.S. Department of Energy

19916

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 23, 2001 3:29 PM
To: York, Michael
Cc: Zimmerman, MaryBeth
Subject: RE: What States are doing on energy efficiency

Okay, thanks.

-----Original Message-----
From: Michael York
Sent: Friday, March 23, 2001 3:24 PM
To: Anderson, Margot
Cc: Zimmerman, MaryBeth
Subject: What States are doing on energy efficiency

19917

DOE021-0371

Martin, Adrienne

65

From: Anderson, Margot
Sent: Monday, March 26, 2001 12:16 PM
To: Zimmerman, MaryBeth
Subject: RE: 1 small change in efficiency graphic

Thanks.

-----Original Message-----
From: MaryBeth Zimmerman
Sent: Monday, March 26, 2001 10:57 AM
To: Anderson, Margot
Subject: 1 small change in efficiency graphic

19918

DOE021-0372

Martin, Adrienne 65

From: Anderson, Margot
Sent: Tuesday, March 27, 2001 6:50 PM
To: KYDES, ANDY
Subject: RE: New NEP chapter

Andy,

Margot

-----Original Message-----
From: KYDES, ANDY
Sent: Tuesday, March 27, 2001 8:03 PM
To: Anderson, Margot
Subject: RE: New NEP chapter

Margot,

is there anything you are waiting on from us? I don't think so but I want to
make sure.

Andy

-----Original Message-----
From: Margot Anderson_at_HQ-EXCH at X400PO
Sent: Monday, March 26, 2001 2:27 PM
To: Kydes, Andy
Subject: RE: New NEP chapter

Thank you. I understand.

-----Original Message-----
From: KYDES, ANDY
Sent: Monday, March 26, 2001 4:13 PM
To: Anderson, Margot
Subject: RE: New NEP chapter

I don't think we can in the next few days. Conference Tuesday and other loose
ends to complete.

Andy

-----Original Message-----
From: Margot Anderson_at_HQ-EXCH at X400PO
Sent: Monday, March 26, 2001 12:46 PM
To: Kydes, Andy; John Conti_at_HQ-EXCH at X400PO; Andrea Lockwood_at_HQ-EXCH at X400PO; William Breed_at_HQ-EXCH at X400PO; Michael Whatley_at_HQ-EXCH at X400PO; Douglas Carter_at_HQ-EXCH at X400PO; Jay Braitsch_at_HQ-EXCH at X400PO; Elena Melchert_at_HQ-EXCH at X400PO; TREVOR COOK_at_HQ-EXCH at X400PO; 'jkstier@bpa.gov'_at_internet at X400PO; Christopher Freitas_at_HQ-EXCH at X400PO; Mark FRIEDRICHS_at_HQ-EXCH at X400PO; David Pumphrey_at_HQ-EXCH at X400PO; Kevin Kolevar_at_HQ-EXCH at X400PO; Abe Haspel_at_HQ-NOTES at X400PO; MaryBeth Zimmerman_at_HQ-NOTES at X400PO; Michael York_at_HQ-NOTES at X400PO
Subject: FW: New NEP chapter

All,

19919

DOE021-0373

Margot

-----Original Message-----
From: Anderson, Margot
Sent: Friday, March 23, 2001 2:36 PM
To: Conti, John; Haspel, Abe; Zimmerman, MaryBeth; Lockwood, Andrea; Breed,

William; KYDES, ANDY; Whatley, Michael; Carter, Douglas; Braitsch, Jay; Melchert, Elena; Cook, Trevor; Breed, William; 'jkstier@bpa.gov'; York, Michael; Freitas, Christopher; Friedrichs, Mark; Pumphrey, David; Kolevar, Kevin
Cc: Kelliher, Joseph
Subject: New NEP chapter

All.

Margot

Martin, Adrienne k5

From: Anderson, Margot
Sent: Tuesday, March 27, 2001 11:40 AM
To: Carter, Douglas
Cc: Braitsch, Jay; Kripowicz, Robert; Rudins, George; DeHoratiis, Guido; Melchert, Elena
Subject: RE: Chapter 8, changes

Yes, of course they can. thank you

Today if possible. SORRY! Can somebody let me know if this do-able?

Margot

-----Original Message-----
From: Carter, Douglas
Sent: Tuesday, March 27, 2001 11:30 AM
To: Anderson, Margot
Cc: Braitsch, Jay; Kripowicz, Robert; Rudins, George; DeHoratiis, Guido; Melchert, Elena
Subject: Chapter 8, changes

Margot -

Doug Carter (FE-26)
US DOE
Washington, DC 20585

19921

Martin, Adrienne 65

From: Anderson, Margot
Sent: Tuesday, March 27, 2001 11:13 AM
To: Cook, Trevor
Subject: RE: here are more fleshed out versions of the 6 papers I sent on Friday

Trevor,

Thank you. No, I worked with Joe over the weekend

Margot

-----Original Message-----
From: Cook, Trevor
Sent: Tuesday, March 27, 2001 11:11 AM
To: Anderson, Margot
Subject: here are more fleshed out versions of the 6 papers I sent on Friday
Importance: High

Margot,

Trev.

19922

Martin, Adrienne 125

From: Anderson, Margot
Sent: Tuesday, March 27, 2001 10:17 AM
To: 'Charles_M._Smith@ovp.eop.gov%internet'
Cc: 'Andrew_D._Lundquist@ovp.eop.gov%internet'; 'Karen_Y._Knutson@ovp.eop.gov%internet'; 'John_Fenzel@ovp.eop.gov%internet'
Subject: RE: status

Charlie,

I sent you chapter 8 on Sunday morning. Please double-check e-mail and let me know.

Please call Joe regarding recommendations.

Margot

Margot

-----Original Message-----
From: Charles_M._Smith@ovp.eop.gov%internet
[mailto:Charles_M._Smith@ovp.eop.gov]
Sent: Tuesday, March 27, 2001 9:33 AM
To: Anderson, Margot
Cc: Andrew_D._Lundquist@ovp.eop.gov%internet; Karen_Y._Knutson@ovp.eop.gov%internet; John_Fenzel@ovp.eop.gov%internet
Subject: status

Margot:

Thanks

Charlie

19923

Martin, Adrienne K5

From: Anderson, Margot
Sent: Wednesday, March 28, 2001 5:43 PM
To: Zimmerman, MaryBeth
Cc: Haspel, Abe; York, Michael
Subject: RE: Chapter 7 arrives!

Thank you. eft a voice-mail for Michael. Please give me a call at your convenience.

—Original Message—
From: MaryBeth Zimmerman
Sent: Wednesday, March 28, 2001 4:47 PM
To: Anderson, Margot
Cc: Haspel, Abe; York, Michael
Subject: Chapter 7 arrives!

Attached is Chapter 7 with our edits today. I

<< File: Renewables Chapter Edited32701.DOC >> << File: Graphics Captions Ch7.doc >> << File: Renewable chapter graphics(ch 7).ppt >> << File: wind, bio, solar, geo.ppt [Recovered].ppt >>

19924

Martin, Adrienne

From: Anderson, Margot
Sent: Wednesday, March 28, 2001 6:12 PM
To: Zimmerman, MaryBeth
Subject: RE: more graphics requests

-----Original Message-----
From: MaryBeth Zimmerman
Sent: Wednesday, March 28, 2001 5:51 PM
To: Anderson, Margot
Subject: Re: more graphics requests

Ch. 6 & 7 graphics with numbers added to charts.

---------- Forwarded by MaryBeth Zimmerman/EE/DOE on 03/28/2001 05:50 PM ----------

Tom Kimbis
03/28/2001 05:37 PM

To: MaryBeth Zimmerman/EE/DOE@DOE
cc:

Subject: Re: more graphics requests

MaryBeth Zimmerman
03/27/2001 01:50 PM

To: Tom Kimbis/EE/DOE@DOE
cc:

Subject: more graphics requests

can you take care of?

---------- Forwarded by MaryBeth Zimmerman/EE/DOE on 03/27/2001 01:50 PM ----------

Margot Anderson@HQMAIL on 03/26/2001 02:02:47 PM

To: MaryBeth Zimmerman/EE/DOE@DOE@HQMAIL
cc:

Subject: more graphics requests

MB,

Hate to keep bugging you but on any bar-chart graphic can you put the number at the top of the bar. If the bar xx kW/h high, put in the actual KW/h number at the top of the bar.

19925

Margot

<< File: ATTACHMENT.TXT >> << File: Ch 6 (efficiency) graphics.ppt >> << File: Renewable chapter graphics(ch 7).ppt >>

19926

Martin, Adrienne 65

From: Anderson, Margot
Sent: Thursday, March 29, 2001 8:40 AM
To: Braitsch, Jay
Subject: RE: Marginal NEP Option

Jay,

I don't know who proposed it but I do think it is worth while to send Joe a note (cc me so I can make the same arguments).

Margot

-----Original Message-----
From: Braitsch, Jay
Sent: Thursday, March 29, 2001 8:23 AM
To: Anderson, Margot
Subject: Marginal NEP Option

19927

Martin, Adrienne

b5

From: Anderson, Margot
Sent: Thursday, March 29, 2001 9:37 AM
To: Kripowicz, Robert; Haspel, Abe; Magwood, William; Scalingi, Paula; PETTIS, LARRY; Pumphrey, David
Subject: More NEP requests

All,

Margot

19928

Martin, Adrienne 65

From: Anderson, Margot
Sent: Thursday, March 29, 2001 3:30 PM
To: Kelliher, Joseph
Subject: RE: chapters, chapters, everywhere

Yep. But only if you can wait until early evening. I'll print you out a set of the story so far.

Margot

-----Original Message-----
From: Kelliher, Joseph
Sent: Thursday, March 29, 2001 3:21 PM
To: Anderson, Margot
Subject: chapters, chapters, everywhere

Can I get a copy of the most recent copies of the chapters? I have gotten lost in the deluge of versions. Thanks.

-----Original Message-----
From: Anderson, Margot
Sent: Thursday, March 29, 2001 1:46 PM
To: Breed, William; Conti, John; Kripowicz, Robert; Braitsch, Jay; Haspel, Abe; Zimmerman, MaryBeth; 'caball@bpa.gov'; Fnednchs, Mark; Carner, Paul; Moses, David; Vernet, Jean; Baer, Mitchell
Cc: Kolevar, Kevin; Kelliher, Joseph
Subject: More NEP assignments

All,

19929

Martin, Adrienne b5

From: Anderson, Margot
Sent: Thursday, March 29, 2001 2:08 PM
To: 'Ball, Crystal A - KN-DC'; Carrier, Paul; Conti, John
Subject: RE: More NEP assignments

Okay, just checking.

-----Original Message-----
From: Ball, Crystal A - KN-DC [mailto:caball@bpa.gov]
Sent: Thursday, March 29, 2001 1:56 PM
To: Anderson, Margot; Carrier, Paul; Conti, John
Subject: RE: More NEP assignments

Crystal

-----Original Message-----
From: Anderson, Margot [mailto:Margot.Anderson@hq.doe.gov]
Sent: Thursday, March 29, 2001 1:46 PM
To: Breed, William; Conti, John; Kripowicz, Robert; Braitsch, Jay; Haspel, Abe; Zimmerman, MaryBeth; 'caball@bpa.gov'; Friedrichs, Mark; Carrier, Paul; Moses, David; Vernet, Jean; Baer, Mitchell
Cc: Kolevar, Kevin; Kelliher, Joseph
Subject: More NEP assignments

All,

If this is unclear, give me a call.

Margot

19930

Martin, Adrienne

b5

From: Anderson, Margot
Sent: Thursday, March 29, 2001 6:37 PM
To: Carrier, Paul
Subject: RE: More NEP assignments

Good idea.

-----Original Message-----
From: Carrier, Paul
Sent: Thursday, March 29, 2001 4:52 PM
To: Anderson, Margot
Subject: RE: More NEP assignments

Margot,

Paul

-----Original Message-----
From: Anderson, Margot
Sent: Thursday, March 29, 2001 1:46 PM
To: Breed, William; Conti, John; Kripowicz, Robert; Braitsch, Jay; Haspel, Abe; Zimmerman, MaryBeth; 'caball@bpa.gov'; Friedrichs, Mark; Carrier, Paul; Moses, David; Vernet, Jean; Baer, Mitchell
Cc: Kolevar, Kevin; Kelliher, Joseph
Subject: More NEP assignments

All,

If this is unclear, give me a call.

Margot

19931

Martin, Adrienne

65

From: Anderson, Margot
Sent: Friday, March 30, 2001 9:50 AM
To: Terry, Tracy
Subject: RE: need a graphic

Tracy,

Yes. Please follow-up. I'd like to see what else we could produce.

Margot

-----Original Message-----
From: Terry, Tracy
Sent: Friday, March 30, 2001 9:30 AM
To: Anderson, Margot
Subject: RE: need a graphic

Margot

Let me know if you would like me to follow up on this, or if the map Paul gave you is sufficient.

Tracy

-----Original Message-----
From: Anderson, Margot
Sent: Thursday, March 29, 2001 7:16 PM
To: Carrier, Paul; Terry, Tracy; KYDES, ANDY
Subject: need a graphic

All,

Anybody know where I can get a graphic on

Margot

19932

Martin, Adrienne b5

From: Anderson, Margot
Sent: Friday, March 30, 2001 11:20 AM
To: Terry, Tracy
Subject: RE: maps

Thank you!

-----Original Message-----
From: Terry, Tracy
Sent: Friday, March 30, 2001 11:18 AM
To: Anderson, Margot
Subject: maps

Margot

Tracy

19933

DOE021-0387

Martin, Adrienne

b5

3/16

From: Anderson, Margot
Sent: Friday, March 30, 2001 1:25 PM
To: Kelliher, Joseph
Subject: RE: one pagers

No reply yet from Charlie on the one-pager on OCS but DOE and DOE working on it just in case. I'll cc you anything they put together.

-----Original Message-----
From: Kelliher, Joseph
Sent: Friday, March 30, 2001 11:14 AM
To: Anderson, Margot
Subject: one pagers

I will work up one on hydraulic fracturing.
We want to give the Secy the one or two pagers tonight for his review.

19934

Martin, Adrienne 65

From: Anderson, Margot
Sent: Wednesday, April 04, 2001 3:40 PM
To: Zimmerman, MaryBeth
Subject: a farmer's retort

Just now getting to your chapter 3 comments as an old "aggie" I wanted to make a comment irrigation.

19935

Martin, Adrienne b5

From: Anderson, Margot
Sent: Thursday, April 05, 2001 8:49 AM
To: Vernet, Jean
Subject: RE: Recommendation One-Pagers for 4/3/01 Principals Meeting

Jean,

Margot

----Original Message----
From: Vernet, Jean
Sent: Thursday, April 05, 2001 7:39 AM
To: Anderson, Margot
Subject: RE: Recommendation One-Pagers for 4/3/01 Principals Meeting
Importance: High

Margot,

Jean

-----Original Message-----
From: Anderson, Margot
Sent: Wednesday, April 04, 2001 12:08 PM
To: Vernet, Jean; Terry, Tracy
Cc: Conti, John; Watts, Edward
Subject: FW: Recommendation One-Pagers for 4/3/01 Principals Meeting

Tracy and/or Jean,

Can one or both of you go to this meeting?

Margot

-----Original Message-----
From: Symons.Jeremy@epamail.epa.gov%internet
[mailto:Symons.Jeremy@epamail.epa.gov]
Sent: Wednesday, April 04, 2001 10:22 AM
To: Charles_M._Smith@ovp.eop.gov%internet
Cc: Kelliher, Joseph; Kolevar, Kevin; Anderson, Margot;
Bruce.Baughman@FEMA.gov%internet;
Carol_J._Thompson@who.eop.gov%internet;
Charles.m.Hess@USACE.army.mil%internet; commcoll@aol.com%internet;
Dina.Ellis@do.treas.gov%internet; Galloglysj@State.gov%internet;
Jhowardj@ceq.eop.gov%internet; Joel_D._Kaplan@who.eop.gov%internet;
Beale.John@epamail.epa.gov%internet; John_fenzel@ovp.eop.gov%internet;
Joseph.Glauber@USDA.gov%internet;
Julieanna_R._Glover@ovp.eop.gov%internet;
Karen_Y._Knutson@ovp.eop.gov%internet; Keith.Collins@USDA.gov%internet;
Kjersten_drager@ovp.eop.gov%internet; Kmurphy@osec.doc.gov%internet;

19936

DOE021-0390

Lori_A._Krauss@omb.eop.gov%internet;
Mark_A._Weatherly@omb.eop.gov%internet;
Mark_J._Sullivan@ovp.eop.gov%internet; McManusmt@State.gov%internet;
Megan_D._Moran@ovp.eop.gov%internet;
Michelle.Poche@OST.DOT.Gov%internet; Mleblanc@ceq.eop.gov%internet;
MPeacock@omb.eop.gov%internet; ndrew_D._Lundquist@oa.eop.gov%internet;
Patricia.Stahlschmidt@FEMA.gov%internet;
Bruce.Baughman@FEMA.gov%internet;
Carol_J._Thompson@who.eop.gov%internet;
Charles.m.Hess@USACE.army.mil%internet; commcoll@aol.com%internet;
Dina.Ellis@do.treas.gov%internet; Galloglysj@State.gov%internet;
Jhowardj@ceq.eop.gov%internet; Joel_D._Kaplan@who.eop.gov%internet;
Beale.John@epamail.epa.gov%internet; John_fenzel@ovp.eop.gov%internet;
Joseph.Glauber@USDA.gov%internet;
Julieanna_R._Glover@ovp.eop.gov%internet;
Karen_Y._Knutson@ovp.eop.gov%internet; Keith.Collins@USDA.gov%internet;
Kjersten_drager@ovp.eop.gov%internet; Kmurphy@osec.doc.gov%internet;
Lori_A._Krauss@omb.eop.gov%internet;
Mark_A._Weatherly@omb.eop.gov%internet;
Mark_J._Sullivan@ovp.eop.gov%internet; McManusmt@State.gov%internet;
Megan_D._Moran@ovp.eop.gov%internet;
Michelle.Poche@OST.DOT.Gov%internet; Mleblanc@ceq.eop.gov%internet;
MPeacock@omb.eop.gov%internet; ndrew_D._Lundquist@oa.eop.gov%internet;
Patricia.Stahlschmidt@FEMA.gov%internet; Kelliher, Joseph; Kolevar,
Kevin; Anderson, Margot
Subject: Re: Recommendation One-Pagers for 4/3/01 Principals Meeting

EPA will hold a meeting tomorrow morning at 9:00 to discuss energy policy recommendations regarding EPA permitting. The meeting will be in room 5415 of Ariel Rios North, 1200 Pennsylvania Avenue.

The entrance to the building is at the Federal Triangle metro stop south of Pennsylvania Avenue on 12th street. Take the doors on the north side of the archway that spans the Federal Triangle metro stop (coming out of the metro, you would go to the doorway on the right).

Have the security desk cal_____to be admitted, and use my name to identify the meeting you are attending.

Thank you.

Jeremy Symons
EPA, Office of Air and Radiation

19937

DOE021-0391

Martin, Adrienne

b6

From: Anderson, Margot
Sent: Thursday, April 05, 2001 9:50 AM
To: 'Charles_M._Smith@ovp.eop.gov%internet'
Subject: RE: Status of Chapters

Okay, I'm sure Joe will want to review before final selection.

-----Original Message-----
From: Charles_M._Smith@ovp.eop.gov%internet
[mailto:Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, April 05, 2001 9:36 AM
To: Anderson, Margot
Subject: Status of Chapters

Margot:

Please send along hard copy of the [redacted] With respect to photographs, EE and FE are pulling together recommendations regarding photographs for inclusion in the chapters. It is DOE's responsibility, however, to recommend/suggest to us which photographs might be used in each chapter.

Charlie

19938

Martin, Adrienne

From: Anderson, Margot
Sent: Thursday, April 05, 2001 5:02 PM
To: 'Charles_M._Smith@ovp.eop.gov%internet'; Kelliher, Joseph
Cc: 'WheelerE@state.gov%internet'
Subject: RE: IA comments on State's Chapter

Charlie,

See my previous e-mail but just to be certain you understand how we are running this. As far as I know ALL DOE comments are run through me as I am the designated consolidator. Comments received independently have not been through my machine (this should not be happening). I send directly to you and ask you to forward to the appropriate agency.

When I get fresh chapter copies from you, I send them to our office directors or assistant secretaries and their staff who I know to be involved in the process. Office directors are free to involve anyone on their staff with the instructions of getting comments back to me. I then try to consolidate into one DOE set but did not have time to do so on the last, fast round from State.

Margot

-----Original Message-----
From: Charles_M._Smith@ovp.eop.gov%internet
[mailto:Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, April 05, 2001 4:43 PM
To: Kelliher, Joseph; Anderson, Margot
Cc: WheelerE@state.gov%internet
Subject: IA comments on State's Chapter

Joe
Margot

If IA's comments are going to be considered, it would be a good idea if they were working from the latest draft and commented on a line by line basis with the comments submitted that way.

Charlie

Charlie

19939

DOE021-0393

Martin, Adrienne 65

From: Anderson, Margot
Sent: Monday, April 09, 2001 11:24 AM
To: Vernet, Jean
Cc: Kelliher, Joseph; Kolevar, Kevin
Subject: NEP Paper fro 4/11 meeting

Jean, Kevin and Joe

Jean - Thanks, I will take a look.

Joe or Kevin - I suspect you are going with S1. Have you had time to take a look at this yet? Anything you want us to be sure to get into the paper? Jean Vernet (PO) is staffing this and is looping in relevant DOE folks at the staff level.

Margot

-----Original Message-----
From: Vernet, Jean
Sent: Monday, April 09, 2001 11:14 AM
To: 'schmidt.lorie@epa.gov'; 'symons.jeremy@epa.gov'
Cc: Kelliher, Joseph; Kolevar, Kevin; Anderson, Margot; Conti, John; Johnson, Nancy; Silva, Robert; McCabe, Michael; Haspel, Abe; Braitsch, Jay
Subject:

Lorie/Jeremy,

Attached is an edited version of the paper distributed at Thursday's meeting. At this time, I have not received comments from our EE office.

If you have any questions or wish to discuss, please call. And I would appreciate any revised version EPA prepares after considering these and other agencies' comments.

Regards,

Jean

Jean E. Vernet
Office of Policy, PO-21
U.S. Department of Energy

<< File: EPA Regulatory Streamlining rev.wpd >>

19940

DOE021-0394

Martin, Adrienne 65

From: Anderson, Margot
Sent: Thursday, April 12, 2001 12:37 PM
To: Kolevar, Kevin; Kelliher, Joseph
Subject: RE: VP Task Force

Kevin,

Margot

-----Original Message-----
From: Kolevar, Kevin
Sent: Thursday, April 12, 2001 12:04 PM
To: Kelliher, Joseph; Anderson, Margot
Subject: RE: VP Task Force

I am familiar with the first but not the second.

Margot, can you help me on that?

-----Original Message-----
From: Kelliher, Joseph
Sent: Thursday, April 12, 2001 10:49 AM
To: Kolevar, Kevin
Subject: VP Task Force

We have some assignments with respect to next week's meeting. Can you handle two of them?

Please work with Margot on these. Thanks.

19941

Martin, Adrienne b5

From: Anderson, Margot
Sent: Thursday, April 12, 2001 1:29 PM
To: Kripowicz, Robert
Cc: Braitsch, Jay; Bradley, Richard
Subject: RE:

Bob.

Thanks!

DOE plays in both.

Margot

—Original Message—
From: Kripowicz, Robert
Sent: Thursday, April 12, 2001 1:25 PM
To: Anderson, Margot
Cc: Braitsch, Jay
Subject: RE:

When I get an opening,I will pursue your question with him.

—Original Message—
From: Anderson, Margot
Sent: Thursday, April 12, 2001 12:38 PM
To: Kripowicz, Robert
Cc: Braitsch, Jay
Subject: RE:

Bob K,

Whoops. Correction Bob Kane is on the [redacted] roup.

Margot

—Original Message—
From: Anderson, Margot
Sent: Thursday, April 12, 2001 12:33 PM
To: Kripowicz, Robert
Cc: Bradley, Richard; Braitsch, Jay
Subject: FW:
Importance: High

Bob,

Thanks for sending along the report you did that built on the policy options paper I sent to Kevin and Joe for NFP consideration.

—Original Message—
From: Kripowicz, Robert
Sent: Thursday, April 12, 2001 12:01 PM
To: Kolevar, Kevin
Cc: Anderson, Margot; Braitsch, Jay; Carter, Douglas
Subject:
Importance: High

<< File: GHG-recommendations.wpd >>

19942

DOE021-0396

also.I hope the are worth it.

Martin, Adrienne 65

From: Anderson, Margot
Sent: Thursday, April 12, 2001 6:24 PM
To: 'Moss.Jacob@epamail.epa.gov%internet'
Cc: 'Symons.Jeremy@epamail.epa.gov%internet'; 'Karen_Y._Knutson@ovp.eop.gov%internet'; 'Charles_M._Smith@ovp.eop.gov%internet'
Subject: RE: EPA comments on Ch. 6

Received. Thanks.

-----Original Message-----
From: Moss.Jacob@epamail.epa.gov%internet
[mailto:Moss.Jacob@epamail.epa.gov]
Sent: Thursday, April 12, 2001 5:16 PM
To: Anderson, Margot
Cc: Symons.Jeremy@epamail.epa.gov%internet; Karen_Y._Knutson@ovp.eop.gov%internet; Charles_M._Smith@ovp.eop.gov%internet
Subject: EPA comments on Ch. 6

Margot, attached are EPA's comments on chapter 6 of the report.

Also, I've asked staff to get back to me with some citations for our Ch. 7 comments, as you requested. We'll get those to you next week. Thanks. - Jacob

(See attached file: ch6 epa comments 4-9-01.doc)

19944

DOE021-0398

Martin, Adrienne 65

From: Anderson, Margot
Sent: Friday, April 13, 2001 12:53 PM
To: Porter, Robert
Subject: RE: chapter 8

Bob - Ignore. This needed to go to WAPA Bob Porter. Your guys already looped on this.

Margot

-----Original Message-----
From: Anderson, Margot
Sent: Thursday, April 12, 2001 1:33 PM
To: Porter, R
Subject: chapter 8

Bob,

A draft of chapter 8

Please acknowledge receipt. My e-mail is acting up.

Margot

<< File: ch 8 march 24 doublespaced.doc >>

19945

DOE021-0399

Martin, Adrienne

65

From: Anderson, Margot
Sent: Wednesday, April 18, 2001 9:33 AM
To: Beschen, Darrell
Subject: RE: <No subject>

Just a small but legal point: do we need permission to use the data?

Margot

-----Original Message-----
From: Darrell Beschen
Sent: Wednesday, April 18, 2001 9:28 AM
To: Anderson, Margot
<No subject>

Tom Kimbis
04/17/2001 03:11 PM

To: Darrell Beschen/EE/DOE@DOE
cc:

Subject: chapter 7

<< File: Renewable chapter graphics(ch 7).ppt >>

19946

Martin, Adrienne

b5

From: Anderson, Margot
Sent: Thursday, April 19, 2001 11:13 AM
To: Beschen, Darrell
Subject: RE: <No subject>

Darrell,

Sorry, need a source for figure 1. Just add in and send the whole file back to me.

Margot

-----Original Message-----
From: Darrell Beschen
Sent: Wednesday, April 18, 2001 9:28 AM
To: Anderson, Margot
Subject: <No subject>

Tom Kimbis
04/17/2001 03:11 PM

To: Darrell Beschen/EE/DOE@DOE
cc:

Subject: chapter 7

<< File: Renewable chapter graphics(ch 7).ppt >>

19947

Martin, Adrienne 65

From: Anderson, Margot
Sent: Monday, April 23, 2001 4:05 PM
To: Zimmerman, MaryBeth
Subject: need a citation

MB,

Just sent you a voice mail. Do call when you get a sec and I'll come down. Easier to do in person.

Than

19948

Martin, Adrienne 105

From: Anderson, Margot
Sent: Wednesday, May 09, 2001 1:14 PM
To: 'Charles Smith (E-mail)'
Cc: Zimmerman, MaryBeth; Braitsch, Jay; Kelliher, Joseph; Cook, Trevor; Rasmussen, Erik; Davis, Joseph; Pumphrey, David
Subject: NEP copies

Charlie,

Here is our estimate for the number of (free) copies of the National Energy Policy we'll need internally. As we discussed, this excludes the number of copies needed for a formal mail out. These would be used internally and for call/write-in requests. A formal mail out from DOE to stakeholders would require additional copies. As you mentioned yesterday, the WH is taking charge of sending copies to Congress and it will be posted on the WEB. I am assuming you are coordinating with our Public Affairs team. Thanks!

FE - 200
EE -200
NE - 200
CI - 200
IA -200
PA -200
PO -200
extra (S1, mostly) - 100

Total 1,500

19949

Martin, Adrienne 15

From: Anderson, Margot
Sent: Wednesday, May 09, 2001 1:38 PM
To: 'Charlie_M._Smith@ove.eop.gov'
Subject: FW: NEP copies

—Original Message—

From: Anderson, Margot
Sent: Wednesday, May 09, 2001 1:14 PM
To: Charles Smith (E-mail)
Cc: Zimmerman, MaryBeth; Braitsch, Jay; Kelliher, Joseph; Cook, Trevor; Rasmussen, Erik; Davis, Joseph; Pumphrey, David
Subject: NEP copies

Charlie,

Here is our estimate for the number of (free) copies of the National Energy Policy we'll need internally. As we discussed, this excludes the number of copies needed for a formal mail out. These would be used internally and for call/write-in requests. A formal mail out from DOE to stakeholders would require additional copies. As you mentioned yesterday, the WH is taking charge of sending copies to Congress and it will be posted on the WEB. I am assuming you are coordinating with our Public Affairs team. Thanks!

FE - 200
EE -200
NE - 200
CI - 200
IA -200
PA -200
PO -200
extra (S1, mostly) - 100

Total: 1,500

19950

DOE021-0404

Martin, Adrienne 65

From: Anderson, Margot
Sent: Wednesday, May 09, 2001 1:40 PM
To: 'Charlie_M._Smith@ovp.eop.gov'
Subject: NEP Copies

Yikes! Your mail keeps bouncing back.

-----Original Message-----
From: Anderson, Margot
Sent: Wednesday, May 09, 2001 1:14 PM
To: Charles Smith (E-mail)
Cc: Zimmerman, MaryBeth; Braitsch, Jay; Kelliher, Joseph; Cook, Trevor; Rasmussen, Erik; Davis, Joseph; Pumphrey, David
Subject: NEP copies

Charlie,

Here is our estimate for the number of (free) copies of the National Energy Policy we'll need internally. As we discussed, this excludes the number of copies needed for a formal mail out. These would be used internally and for call/write-in requests. A formal mail out from DOE to stakeholders would require additional copies. As you mentioned yesterday, the WH is taking charge of sending copies to Congress and it will be posted on the WEB. I am assuming you are coordinating with our Public Affairs team. Thanks!

FE - 200
EE -200
NE - 200
CI - 200
IA -200
PA -200
PO -200
extra (S1, mostly) - 100

Total: 1,500

19951

DOE021-0405

(b)(5)

Kelliher, Joseph

From: Anderson, Margot
Sent: Tuesday, May 08, 2001 1:02 PM
To: Charles Smith (E-mail); Elena Melchert (E-mail)
Cc: Kelliher, Joseph; McSlarrow, Kyle
Subject: CEF in the NEP

Thank you.

Margot

19952

DOE021-0406

Martin, Adrienne 65

From: Anderson, Margot
Sent: Thursday, May 03, 2001 7:13 PM
To: 'Charles Smith (E-mail)'
Subject: new chapter 6 graphic (as requested)

CHP schematic.ppt

You'll get hard copy in the morning.

19953

DOE021-0407

(b)(5)

Martin, Adrienne

From: Anderson, Margot
Sent: Monday, April 16, 2001 9:08 AM
To: 'Charles_M._Smith@ovp.eop.gov%internet'
Subject: RE: Edited chapter 6

Charlie,

I just received comments form EPA and DPI later Friday. I have yet to incorporate them. Did Joan?

Margot

----Original Message----
From: Charles_M._Smith@ovp.eop.gov%internet
[mailto:Charles_M._Smith@ovp.eop.gov]
Sent: Monday, April 16, 2001 8:51 AM
To: Anderson, Margot
Subject: Edited chapter 6

Margot:

Attached is the edited Chapter 6 with some questions/observations from Joan. Please turn this one quickly. We're coming down to the wire, and we need to start closing chapters off.

Charlie
---------- Forwarded by Charles M. Smith/OVP/EOP on 04/16/2001 08:49 AM ----------

(Embedded
image moved CommColl@aol.com
to file: 04/16/2001 07:52:45 AM
PIC06210.PCX)

Record Type: Record

To: Charles M. Smith/OVP/EOP
cc:
Subject: Edited chapter 6

Charlie--

19955

DOE021-0409

(b)(5)

That's if for now. Onward to chapter 7.
Joan

19956

DOE021-0410

(b)(5)

Martin, Adrienne

From: Anderson, Margot
Sent: Tuesday, March 06, 2001 4:56 PM
To: KYDES, ANDY
Subject: RE: National Energy Policy Paper

Yes, Thanks. Been jammed up all day. I hope to get some guidance tomorrow on next steps in the process. I am a bit confused now about all the chapters and the policy development piece.

-----Original Message-----
From: KYDES, ANDY
Sent: Tuesday, March 06, 2001 7:35 PM
To: Anderson, Margot
Subject: FW: National Energy Policy Paper

Margot,

I hope you have what you needed form us so far. I am putting together comments
on Chapter 10 and will forward them to you and to james hart of the State Department. Mike put together this useful collection of sites that I thought
you should also have handy.

Andy

-----Original Message-----
From: Grillot, Michael
Sent: Friday, March 02, 2001 2:59 PM
To: JAMES HART
Cc: Feld, Lowell; Kydes, Andy; Cato, Derriel; Macintyre, Douglas; Kreil, Erik; DAVID PUMPHREY; LEONARD COBURN; GEORGE PERSON; ROBERT PRICE; BARRY GALE, JOHN SHAGES
Subject: RE: National Energy Policy Paper

Jim,

19957

DOE021-0411

Mike Grillot
International Energy Statistics Team and International Channel Manager
Energy Information Administration

—Original Message—

19958

DOE021-0412

From: Feld, Lowell
Sent: Friday, March 02, 2001 1:14 PM
To: Grillot, Michael
Subject: FW: National Energy Policy Paper

-----Original Message-----
From: James HART_at_HQ-EXCH at X400PO
Sent: Friday, March 02, 2001 12:05 PM
To: Cato, Derriel; Macintyre, Douglas; Kreil, Erik; Feld, Lowell; David Pumphrey_at_HQ-EXCH at X400PO; Leonard Coburn_at_HQ-EXCH at X400PO; George PERSON_at_HQ-EXCH at X400PO; Robert S PRICE_at_HQ-EXCH at X400PO; Barry GALE_at_HQ-EXCH at X400PO; John Shages_at_HQ-EXCH at X400PO
Subject: National Energy Policy Paper

Please provide me with your suggested edits by COB, Tuesday, March 6. I will incorporate into one document and send over to State.

Jim: << File: NEPGSECT.DOC >>

19959

DOE021-0413

Martin, Adrienne

From: Anderson, Margot
Sent: Wednesday, April 11, 2001 2:19 PM
To: Terry, Tracy
Cc: Conti, John
Subject: FW: Graph


wh.ppt


PIC21965.PCX

Tracy,

—Original Message—
From: Charles_M._Smith@ovp.eop.gov%internet
[mailto:Charles_M._Smith@ovp.eop.gov]
Sent: Wednesday, April 11, 2001 1:19 PM
To: Anderson, Margot
Subject: Graph

Margot:

FYI, per our discussion. Graph is a substitute for existing graph in old Chapter 2 in the Electricity section.

Charlie
---------- Forwarded by Charles M. Smith/OVP/EOP on 04/11/2001 01:16 PM ----------

(Embedded
image moved "Kondis, Paul" <Paul.Kondis@eia.doe.gov>
to file: 04/11/2001 12:50:30 PM
PIC21965.PCX)

Record Type: Record

To: Charles M. Smith/OVP/EOP

cc:
Subject: Graph

California In-State Electricity Sales and Generation, 1993-1999
<<wh.ppt>>

19960

DOE021-0414

Adrienne

Anderson, Margot
Tuesday, April 10, 2001 6:50 PM
Mansueti, Lawrence
t: RE:

s, Larry. I think that might help.

----Original Message----
rom: Lawrence Mansueti
ient: Tuesday, April 10, 2001 6:34 PM
To: Anderson, Margot
Subject: RE:

Am out Wed. but will draft talking points and email to you before I leave tonite.

Thanks for the opportunity.....

Margot Anderson@HQMAIL on 04/10/2001 06:26:16 PM

To: Lawrence Mansueti/EE/DOE@DOE@HQMAIL
cc: Paul Carrier@HQMAIL

Subject: RE

Larry,

Thanks for the voice mail.

Is this something you can do on We

Margot

-----Original Message-----
From: Lawrence Mansueti
Sent: Tuesday, April 10, 2001 5:40 PM
To: KMurphy@doc.gov%internet
Cc: Carrier, Paul; Anderson, Margot; Jane.S.Hannuksela@noaa.gov@DOE%HQ-NOTES; DCOHEN1@DOC.GOV@DOE%HQ-NOTES; Craig.R.O'Connor@noaa.gov@DOE%HQ-NOTES; william_bettenberg@ios.doi.gov@DOE%HQ-NOTES; charles.m.hess@usace.army.mil@DOE%HQ-NOTES; michael.r.walsh@wrc01.usace.army.mil@DOE%HQ-NOTES; darrell.g.nolton@wrc01.usace.army.mil@DOE%HQ-NOTES; mjanopaul@fs.fed.us@DOE%HQ-NOTES; andrew_d._lundquist@ovp.eop.gov@DOE%HQ-NOTES; karen_y._knutson@ovp.eop.gov@DOE%HQ-NOTES; Dixon, Robert; Parks, William; Richardson, Don; York, Michael
Subject: Re:

Kevin --

b (5)

Larry Mansueti, Office of Energy Efficiency and Renewable Energy
Paul Carrier, Office of Policy
U.S. DOE

<KMurphy@doc.gov> on 04/09/2001 06:18:58 PM

To: karen_y._knutson@ovp.eop.gov@internet@HQMAIL, andrew_d._lundquist@ovp.eop.gov@internet@HQMAIL

cc: Paul Carrier@HQMAIL, Lawrence Mansueti/EE/DOE@DOE@HQMAIL, william_bettenberg@ios.doi.gov@internet@HQMAIL, michael.r.walsh@wrc01.usace.army.mil@internet@HQMAIL, charles.m.hess@hq02.usace.army.mil@internet@HQMAIL, darrell.g.nolton@wrc01.usace.army.mil@internet@HQMAIL, mjanopaul@fs.fed.us@internet@HQMAIL, keith.collins@usda.gov@internet@HQMAIL, Jane.S.Hannuksela@noaa.gov@internet@HQMAIL, Craig.R.O'Connor@noaa.gov@internet@HQMAIL, dcohen1@doc.gov@internet@HQMAIL

Subject:

<< File: Hydro Draft Recs.wpd >>

<< File: bpuxzdag >>

19963

DOE021-0417

(b)(5)

Martin, Adrienne

From: Anderson, Margot
Sent: Tuesday, April 10, 2001 6:26 PM
To: Mansueti, Lawrence
Cc: Carrier, Paul
Subject: RE

Larry,

Thanks for the voice mail!

Margot

—Original Message—
From: Lawrence Mansueti
Sent: Tuesday, April 10, 2001 5:40 PM
To: KMurphy@doc.gov%internet
Cc: Carrier, Paul; Anderson, Margot; Jane.S.Hannuksela@noaa.gov@DOE%HQ-NOTES; DCOHEN1@DOC.GOV@DOE%HQ-NOTES; Craig.R.O'Connor@noaa.gov@DOE%HQ-NOTES; william_bettenberg@ios.doi.gov@DOE%HQ-NOTES; charles.m.hess@usace.army.mil@DOE%HQ-NOTES; michael.r.walsh@wrc01.usace.army.mil@DOE%HQ-NOTES; darrell.g.nolton@wrc01.usace.army.mil@DOE%HQ-NOTES; mjanopaul@fs.fed.us@DOE%HQ-NOTES; andrew_d._lundquist@ovp.eop.gov@DOE%HQ-NOTES; karen_y._knutson@ovp.eop.gov@DOE%HQ-NOTES; Dixon, Robert; Parks, William; Richardson, Don; York, Michael
Subject: Re

Kevin --

Larry Mansueti, Office of Energy Efficiency and Renewable Energy
Paul Carrier, Office of Policy
U.S. DOE

<KMurphy@doc.gov> on 04/09/2001 06:18:58 PM

To: karen_y._knutson@ovp.eop.gov@internet@HQMAIL, andrew_d._lundquist@ovp.eop.gov@internet@HQMAIL
cc: Paul Carrier@HQMAIL, Lawrence Mansueti/EE/DOE@DOE@HQMAIL, william_bettenberg@ios.doi.gov@internet@HQMAIL, michael.r.walsh@wrc01.usace.army.mil@internet@HQMAIL, charles.m.hess@hq02.usace.army.mil@internet@HQMAIL,

19964

darrell.g.nolton@wrc01.usace.army.mil@internet@HQMAIL, mjanopaul@fs.fed.us@internet@HQMAIL, keith.collins@usda.gov@internet@HQMAIL, Jane.S.Hannuksela@noaa.gov@internet@HQMAIL, Craig.R.O'Connor@noaa.gov@internet@HQMAIL, dcohen1@doc.gov@internet@HQMAIL

Subject:

Martin, Adrienne

From: Anderson, Margot
Sent: Friday, March 02, 2001 5:33 PM
To: Cook, Trevor; Scalingi, Paula; PETTIS, LARRY; KENDELL, JAMES; Zimmerman, MaryBeth; Sullivan, John; 'jkstier@bpa.gov'; Kripowicz, Robert; Haspel, Abe; Magwood, William; 'jkstier@bpa.gov'; Whatley, Michael; Braitsch, Jay; Conti, John; Carter, Douglas; KYDES, ANDY; Pumphrey, David; Hart, James; KYDES, ANDY; Breed, William; Conti, John
Cc: Kelliher, Joseph
Subject: Attachments for Monday NEP meeting

All,

Reminder that we will be meeting in room 7B-040 at 1:00 on Monday (3/5)

Look forward to seeing you on Monday.

Margot


NEP Policy Issues.doc


NatEnergy.pdf

19966

Martin, Adrienne

From: Anderson, Margot
Sent: Monday, March 05, 2001 6:10 PM
To: 'John_Fenzel@ovp.eop.gov%internet'
Subject: RE: Nat. Energy Policy Interim Report Files

John

Can you clear me into the Tuesday 11:00 meeting? Joe asked me to go with him. Thanks.

Mrgot

(b)(6)

-----Origir al Message-----
From: John_Fenzel@ovp.eop.gov%internet [mailto:John_Fenzel@ovp.eop.gov]
Sent: Friday, March 02, 2001 4:52 PM
To: Kelliher, Joseph; Anderson, Margot;
Juleanna_R._Glover@ovp.eop.gov%internet; Kmurphy@osec.doc.gov%internet;
Dina.Ellis@do.treas.gov%internet;
Sue_Ellen_Wooldridge@IOS.DOI.gov%internet;
Joel_D._Kaplan@who.eop.gov%internet; Keith.Collins@USDA.gov%internet;
Joseph.Glauber@USDA.gov%internet; Galloglysj@State.gov%internet;
McManusmt@State.gov%internet; Michelle.Poche@OST.DOT.Gov%internet;
Patricia.Stahlschmidt@FEMA.gov%internet; Brenner.Rob@EPA.gov%internet;
Symons.Jeremy@EPA.gov%internet; Beale.John@EPA.gov%internet;
MPeacock@omb.eop.gov%internet; Mark_A._Weatherly@omb.eop.gov%internet;
Robert_C._McNally@opd.eop.gov%internet; Jhowardj@ceq.eop.gov%internet;
William_bettenberg@IOS.DOI.gov%internet;
Tom_fulton@IOS.DOI.gov%internet; Kjersten_drager@ovp.eop.gov%internet;
Mleblanc@ceq.eop.gov%internet; Bruce.Baughman@FEMA.gov%internet;
Charles.m.Hess@USACE.army.mil%internet; akeeler@cea.eop.gov%internet;
commcoll@aol.com%internet
Cc: Andrew_D._Lundquist@ovp.eop.gov%internet;
Karen_Y._Knutson@ovp.eop.gov%internet;
Charles_M._Smith@ovp.eop.gov%internet;
Charles_D._McGrath_Jr@ovp.eop.gov%internet;
Robert_C._McNally@oa.eop.gov%internet; Cesar_Conda@ovp.eop.gov%internet;
Jennifer_H._Mayfield@ovp.eop.gov%internet;
Mary_J._Matalin@ovp.eop.gov%internet;
Nancy_P._Dorn@who.eop.gov%internet; Megan_D._Moran@ovp.eop.gov%internet
Subject: Nat. Energy Policy Interim Report Files

FYI: The pdf file of the Draft NEPD Interim Report is attached below in the second file listed. Double click that icon and the Adobe Acrobat Program will call up the file.

John Fenzel

---------- Forwarded by John Fenzel/OVP/EOP on 03/02/2001 04:36 PM ----------

19967

DOE021-0421

(b)(5)

Martin, Adrienne

From: Anderson, Margot
Sent: Monday, February 12, 2001 1:06 PM
To: PETTIS, LARRY
Subject: RE: Input on Outlines

Thanks.

-----Original Message-----
From: PETTIS, LARRY
Sent: Monday, February 12, 2001 3:26 PM
To: Anderson, Margot
Subject: Input on Outlines

19968

DOE NEWS

NEWS MEDIA CONTACT:
Drew Malcomb, 202/586-5806
Jeanne Lopatto/Joe Davis, 202/586-4940

FOR IMMEDIATE RELEASE
March 14, 2001

Clean Coal Technology Burner Sales Top $1 Billion

Commercial Success Shows Benefits of Clean Coal Investment

(Washington, D.C.) The U.S. Department of Energy today announced that sales of a clean coal technology system that reduces the formation of pollutants related to the operation of coal-fired plants now top $1 billion. The advanced, low polluting coal combustion system called the "low-NOx concentric firing system" (LNCFS™), first pioneered in 1992-93 as part of the Clean Coal Technology Program, is rapidly becoming one of the government's fastest growing clean coal technology success stories. Results show the system is reducing nitrogen oxides, NOx, by nearly 40 percent in older coal burning plants.

According to data compiled by the Energy Department's National Energy Technology Laboratory in Morgantown, West Virginia, 56,000 megawatts of electricity are now being generated in the United States by power plants equipped with the high-tech burner.

"Advances in clean coal technology allow us to use America's abundant coal reserves more efficiently and, at the same time, protect the quality of our environment. America's clean coal technology program will be an important part of the Administration's comprehensive national energy plan, along with significant investments for clean coal technologies the President will submit as part of the Administration's budget."

Coal currently accounts for more than 52 percent of the electricity produced in the United States. The Bush Administration's budget proposal will include support for further clean coal technology advances as one of the core features of its energy program.

The advanced coal burner was first tested in the earlier Clean Coal Technology Program. The coal burner reduces the formation of nitrogen oxides, or NOx, one of the air pollutants that contributes to smog, ground-level ozone, and acid rain.

(MORE)

R-01-037

Printed with soy ink on recycled paper

(b)(5)

Table 1.4 Energy Consumption by Source

(Quadrillion Btu)

	Fossil Fuels						Renewable Energy[a]					
	Coal	Natural Gas[b]	Petroleum[c]	Total[d]	Nuclear Electric Power	Hydroelectric Pumped Storage[e]	Conventional Hydroelectric Power	Wood, Waste, Alcohol[f]	Geothermal	Solar and Wind	Total	Total[f]
1973 Total	12.971	22.512	34.840	70.316	0.910	(g)	3.010	1.529	0.043	NA	4.581	R75.808
1974 Total	12.663	21.732	33.455	67.906	1.272	(g)	3.309	1.540	.053	NA	4.902	R74.080
1975 Total	12.663	19.948	32.731	65.355	1.900	(g)	3.219	1.499	.070	NA	4.788	R72.042
1976 Total	13.584	20.345	35.175	69.104	2.111	(g)	3.066	1.713	.078	NA	4.857	R76.072
1977 Total	13.922	19.931	37.122	70.989	2.702	(g)	2.515	1.838	.077	NA	4.431	R78.122
1978 Total	13.766	20.000	37.965	71.856	3.024	(g)	3.141	2.038	.064	NA	5.243	R80.123
1979 Total	15.040	20.666	37.123	72.892	2.776	(g)	3.141	2.152	.084	NA	5.377	R81.044
1980 Total	15.423	20.394	34.202	69.984	2.739	(g)	E3.118	2.485	.110	NA	5.712	R78.435
1981 Total	15.908	19.928	31.931	67.750	3.008	(g)	E3.105	2.590	.123	NA	5.818	R76.569
1982 Total	15.322	18.505	30.231	64.036	3.131	(g)	E3.572	2.615	.105	NA	6.292	R73.440
1983 Total	15.894	17.357	30.054	63.290	3.203	(g)	E3.899	2.831	.129	(s)	6.860	R73.317
1984 Total	17.071	18.507	31.051	66.617	3.553	(g)	E3.800	2.880	.165	(s)	6.845	R76.972
1985 Total	17.478	17.834	30.922	66.221	4.149	(g)	E3.398	E2.864	.198	(s)	6.460	R76.778
1986 Total	17.260	16.708	32.196	66.148	4.471	(g)	E3.446	E2.841	.219	(s)	6.507	R77.065
1987 Total	18.008	17.744	32.865	68.626	4.906	(g)	E3.117	E2.823	.229	(s)	6.170	R79.633
1988 Total	18.846	18.552	34.222	71.660	5.661	(g)	E2.662	E2.937	.217	(s)	5.817	R83.068
1989 Total	h18.944	19.384	34.214	72.536	5.677	(g)	2.998	E3.050	.334	.083	6.465	R84.607
1990 Total	19.136	19.296	33.553	71.910	6.162	-.036	3.146	E2.646	.355	.094	6.241	R84.214
1991 Total	18.985	19.606	32.845	71.505	6.580	-.047	3.159	E2.687	.363	.097	6.306	R84.271
1992 Total	19.144	20.131	33.527	72.889	6.608	-.043	2.818	E2.831	.374	.097	6.121	R85.491
1993 Total	19.755	20.827	33.841	74.500	6.520	-.042	3.119	2.791	.387	.102	6.399	R87.281
1994 Total	19.924	21.288	34.670	76.081	6.838	-.035	2.993	2.925	.388	.107	6.414	R89.189
1995 Total	20.016	22.163	34.553	76.915	7.177	-.028	3.481	3.056	.333	.106	6.976	R90.924
1996 Total	20.940	22.559	35.757	79.388	7.168	-.032	3.892	3.114	.346	.110	7.461	R93.902
1997 Total	21.444	22.530	36.266	80.395	6.678	-.042	3.961	2.991	.322	.107	7.382	R94.307
1998 January	1.874	2.476	3.045	7.404	.615	(s)	.312	E.256	E.029	E.009	.606	R8.614
February	1.651	2.177	2.743	6.576	.542	.001	.321	E.230	E.025	E.008	.585	R7.694
March	1.712	2.189	3.098	7.006	.571	(s)	.342	E.255	E.029	E.009	.635	R8.201
April	1.595	1.758	3.056	6.420	.505	-.005	.315	E.246	E.025	E.009	.595	R7.506
May	1.726	1.547	3.047	6.326	.547	-.008	.358	E.253	E.025	E.009	.645	R7.503
June	1.852	1.507	3.078	6.450	.592	-.007	.351	E.245	E.025	E.009	.630	R7.657
July	2.023	1.621	3.228	6.887	.653	-.007	.324	E.254	E.028	E.009	.615	R8.140
August	2.027	1.632	3.208	6.891	.641	-.007	.294	E.255	E.029	E.009	.586	R8.101
September	1.842	1.517	3.032	6.403	.608	-.003	.240	E.247	E.028	E.009	.524	R7.522
October	1.755	1.528	3.182	6.472	.610	-.005	.215	E.256	E.030	E.009	.510	R7.576
November	1.672	1.771	2.996	6.442	.609	-.005	.221	E.247	E.028	E.009	.505	R7.541
December	1.838	2.195	3.220	7.257	.664	(s)	.275	E.258	E.028	E.009	.570	R8.478
Total	21.569	21.921	36.934	80.539	7.157	-.046	3.569	3.003	.328	.104	7.005	R94.537
1999 January	1.868	2.610	3.143	7.627	.695	-.006	.308	E.299	E.027	E.007	.641	R8.947
February	1.627	2.195	2.850	6.675	.608	-.004	.303	E.267	E.024	E.007	.602	R7.872
March	1.699	2.237	3.220	7.164	.622	-.004	.339	E.293	E.027	E.008	.667	R8.440
April	1.627	1.845	3.061	6.550	.513	-.005	.304	E.286	E.026	E.009	.625	R7.675
May	1.695	1.554	3.090	6.349	.593	-.007	.320	E.294	E.028	E.012	.654	R7.580
June	1.833	1.472	3.171	6.485	.659	-.006	.330	E.286	E.033	E.011	.660	R7.788
July	2.061	1.578	3.274	6.924	.710	-.006	.322	E.296	E.035	E.012	.665	R8.286
August	2.011	1.622	3.319	6.968	.725	-.008	.284	E.296	E.036	E.011	.627	R8.303
September	1.815	1.504	3.114	6.449	.648	-.004	.245	E.288	E.035	E.009	.577	R7.661
October	1.745	1.627	3.282	6.667	.591	-.005	.232	E.295	E.036	E.008	.571	R7.813
November	1.708	1.767	3.051	6.547	.645	-.005	.244	E.287	E.033	E.007	.572	R7.748
December	1.871	2.272	3.386	7.545	.727	-.004	.282	E.298	E.033	E.008	.621	R8.875
Total	21.560	22.289	37.960	81.957	7.731	-.064	3.513	3.486	.374	.110	7.483	R96.991
2000 January	1.957	2.586	3.071	7.628	.723	-.005	.275	E.308	E.027	E.009	.619	R8.953
February	1.778	2.411	2.981	7.190	.655	-.005	.249	E.286	E.023	E.008	.566	R8.397
March	1.750	2.119	3.149	7.033	.643	-.006	.288	E.305	E.023	E.009	.626	R8.284
April	1.590	1.839	2.971	6.415	.598	-.004	.305	E.297	E.024	E.011	.638	R7.636
May	1.720	1.701	3.195	6.634	.653	-.005	.301	E.303	E.025	E.012	.641	R7.911
June	1.867	1.569	3.170	6.620	.686	-.006	.278	E.290	E.026	E.010	.604	R7.898
July	R1.952	1.608	3.235	6.811	.735	-.003	.270	E.311	E.028	E.010	.619	R8.149
August	R2.057	R1.695	3.340	7.122	.722	-.004	.265	E.309	E.028	E.009	.611	R8.439
September	R1.837	R1.501	3.155	6.512	.654	-.006	.206	E.298	E.027	E.009	.541	R7.688
October	1.812	F1.599	3.254	6.677	.587	-.004	.188	E.311	E.028	E.010	.537	7.784
10-Month Total	18.320	E18.628	31.522	68.642	6.655	-.048	2.625	E3.019	E.260	E.098	6.002	81.139
1999 10-Month Total	17.980	18.243	31.523	67.860	6.364	-.055	2.587	E2.900	E.307	E.094	6.289	80.363
1998 10-Month Total	18.058	17.950	30.717	66.834	5.883	-.041	3.073	E2.498	E.272	E.087	5.930	78.513

[a] End-use consumption, electric utility and nonutility electricity net generation, and net imports of electricity.
[b] Includes supplemental gaseous fuels.
[c] Petroleum products supplied, including natural gas plant liquids and crude oil burned as fuel.
[d] Includes coal coke net imports and electricity net imports from fossil fuels. See Table 1.5.
[e] Pumped storage facility production minus energy used for pumping.
[f] Alcohol (ethanol blended into motor gasoline) is included in both "Petroleum" and "Alcohol," but is counted only once in total energy consumption.
[g] Included in conventional hydroelectric power.
[h] Beginning in 1989, includes coal consumed by "Other Power Producers." See Table 6.2.
[i] Beginning in 1989, includes electricity generated by nonutility nuclear units.
R=Revised. NA=Not available. E=Estimate. F=Forecast. (s)=Less than +0.5 trillion Btu and greater than -0.5 trillion Btu.
Notes: • See Note 2 at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 States and the District of Columbia.
Sources: • **Coal:** Tables 6.1 and A5. • **Natural Gas:** Tables 4.1 and A4. • **Petroleum:** Tables 3.1a and A3. • **Nuclear Electric Power:** Tables 8.1 and A6. • **Hydroelectric Pumped Storage:** Tables 7.2 and A6. • **Renewable Energy:** Table E1.

1 This table is redesigned to incorporate additional renewable energy data. See Appendix E for further information.

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Table 1.3 Energy Production by Source

(Quadrillion Btu)

	Fossil Fuels					Nuclear Electric Power	Hydroelectric Pumped Storage[c]	Renewable Energy[a]					Total
	Coal	Natural Gas (Dry)	Crude Oil[b]	Natural Gas Plant Liquids	Total			Conventional Hydroelectric Power	Wood, Waste, Alcohol[d]	Geothermal	Solar and Wind	Total	
1973 Total	13.992	22.187	19.493	2.569	58.241	0.910	(e)	2.861	1.529	0.043	NA	4.433	R63.585
1974 Total	14.074	21.210	18.575	2.471	56.331	1.272	(e)	3.177	1.540	.053	NA	4.769	R62.372
1975 Total	14.989	19.640	17.729	2.374	54.733	1.900	(e)	3.155	1.499	.070	NA	4.723	R61.357
1976 Total	15.654	19.480	17.262	2.327	54.723	2.111	(e)	2.976	1.713	.078	NA	4.768	R61.602
1977 Total	15.755	19.565	17.454	2.327	55.101	2.702	(e)	2.333	1.838	.077	NA	4.249	R62.052
1978 Total	14.910	19.485	18.434	2.245	55.074	3.024	(e)	2.937	2.038	.064	NA	5.039	R63.137
1979 Total	17.540	20.076	18.104	2.286	58.006	2.776	(e)	2.931	2.152	.084	NA	5.166	R65.948
1980 Total	18.598	19.908	18.249	2.254	59.008	2.739	(e)	E2.900	2.485	.110	NA	5.494	R67.241
1981 Total	18.377	19.699	18.146	2.307	58.529	3.008	(e)	E2.758	2.590	.123	NA	5.471	R67.007
1982 Total	18.639	18.319	18.309	2.191	57.458	3.131	(e)	E3.266	2.615	.105	NA	5.985	R66.574
1983 Total	17.247	16.593	18.392	2.184	54.416	3.203	(e)	E3.527	2.831	.129	(s)	6.488	R64.106
1984 Total	19.719	18.008	18.848	2.274	58.849	3.553	(e)	E3.386	2.880	.165	(s)	6.431	R68.832
1985 Total	19.325	16.980	18.992	2.241	57.539	4.149	(e)	E2.970	E2.864	.198	(s)	6.033	R67.720
1986 Total	19.509	16.541	18.376	2.149	56.575	4.471	(e)	E3.071	E2.841	.219	(s)	6.132	R67.178
1987 Total	20.141	17.136	17.675	2.215	57.167	4.906	(e)	E2.635	E2.823	.229	(s)	5.687	R67.760
1988 Total	20.738	17.599	17.279	2.260	57.875	5.661	(e)	E2.334	E2.937	.217	(s)	5.489	R69.025
1989 Total	21.346	17.847	16.117	2.158	57.468	f5.677	(e)	2.855	E3.050	.323	.083	6.311	R69.457
1990 Total	22.456	18.362	15.571	2.175	58.564	6.162	-.036	3.048	E2.646	.343	.094	6.132	R70.822
1991 Total	21.594	18.229	15.701	2.306	57.829	6.580	-.047	3.021	E2.687	.348	.097	6.153	R70.515
1992 Total	21.629	18.375	15.223	2.363	57.590	6.608	-.043	2.617	E2.831	.355	.097	5.901	R70.056
1993 Total	20.249	18.584	14.494	2.408	55.736	6.520	-.042	2.892	2.791	.369	.102	6.153	R68.367
1994 Total	22.111	19.348	14.103	2.391	57.952	6.838	-.035	2.684	2.925	.364	.107	6.080	R70.836
1995 Total	22.029	19.101	13.887	2.442	57.458	7.177	-.028	3.207	3.056	.314	.106	6.683	R71.291
1996 Total	22.684	19.363	13.723	2.530	58.299	7.168	-.032	3.593	3.114	.332	.110	7.148	R72.583
1997 Total	23.211	19.394	13.658	2.495	58.758	6.678	-.042	3.718	2.991	.322	.107	7.138	R72.532
1998 January	2.081	1.688	1.176	.211	5.156	.615	(s)	E.298	E.256	E.029	E.009	.591	R6.362
February	1.850	1.493	1.052	.196	4.591	.542	.001	E.308	E.230	E.025	E.008	.571	R5.705
March	2.042	1.669	1.152	.217	5.079	.571	(s)	E.326	E.255	E.029	E.009	.619	R6.268
April	1.955	1.610	1.128	.211	4.904	.505	-.005	E.295	E.246	E.025	E.009	.574	R5.979
May	1.926	1.674	1.141	.214	4.956	.547	-.008	E.341	E.253	E.025	E.009	.627	R6.123
June	1.962	1.604	1.091	.198	4.854	.592	-.007	E.332	E.245	E.025	E.009	.611	R6.051
July	1.931	1.636	1.114	.185	4.865	.653	-.007	E.296	E.254	E.028	E.009	.587	R6.099
August	1.944	1.647	1.115	.201	4.908	.641	-.007	E.261	E.255	E.029	E.009	.553	R6.095
September	2.034	1.499	1.007	.194	4.735	.608	-.003	E.218	E.247	E.028	E.009	.502	R5.841
October	2.063	1.620	1.104	.204	4.991	.610	-.005	E.199	E.256	E.030	E.009	.494	R6.090
November	1.920	1.562	1.068	.200	4.750	.609	-.005	E.210	E.247	E.028	E.009	.494	R5.847
December	2.011	1.586	1.087	.189	4.872	.664	(s)	E.262	E.258	E.028	E.009	.557	R6.093
Total	23.719	19.288	13.235	2.420	58.662	7.157	-.046	3.345	3.003	.327	.104	6.780	R72.553
1999 January	R1.942	1.653	1.072	.192	4.859	.695	-.006	.301	E.299	E.027	E.007	.635	R6.183
February	R1.966	1.494	.969	.181	4.609	.608	-.004	.297	E.267	E.024	E.007	.596	R5.809
March	R2.099	1.660	1.058	.207	5.024	.622	-.004	.332	E.293	E.027	E.008	.661	R6.303
April	R1.906	1.581	1.024	.203	4.714	.513	-.005	.286	E.286	E.025	E.009	.607	R5.829
May	R1.818	1.617	1.056	.208	4.699	.593	-.007	.302	E.294	E.028	E.012	.636	R5.921
June	R1.930	1.576	1.002	.210	4.720	.659	-.006	.312	E.286	E.032	E.011	.642	R6.014
July	R1.878	1.623	1.042	.221	4.764	.710	-.006	.304	E.296	E.035	E.012	.647	R6.114
August	R1.982	1.611	1.039	.217	4.849	.725	-.008	.264	E.296	E.036	E.011	.607	R6.174
September	R1.975	1.556	1.010	.215	4.756	.648	-.004	.218	E.288	E.035	E.009	.550	R5.950
October	R1.924	1.613	1.069	.227	4.833	.591	-.005	.209	E.295	E.036	E.008	.548	R5.966
November	R1.961	1.563	1.037	.219	4.780	.645	-.005	.220	E.287	E.033	E.007	.548	R5.968
December	R1.971	1.579	1.071	.227	4.848	.727	-.004	.261	E.298	E.033	E.008	.601	R6.171
Total	R23.351	19.126	12.451	2.528	57.456	7.736	-.064	3.306	3.486	.374	.110	7.275	R72.404
2000 January	1.857	E1.611	E1.049	.225	4.742	.723	-.005	.254	E.308	E.027	E.009	.598	R6.057
February	1.849	E1.519	E.991	.215	4.574	.655	-.005	.226	E.286	E.023	E.008	.543	R5.768
March	2.110	E1.646	E1.056	.230	5.042	.643	-.006	.269	E.305	E.023	E.009	.607	R6.286
April	1.732	E1.558	E1.018	.221	4.529	.598	-.004	.287	E.297	E.024	E.011	.620	R5.742
May	1.879	E1.615	E1.049	.225	4.768	.653	-.005	.279	E.303	E.025	E.012	.620	R6.036
June	1.918	E1.581	E1.013	.216	4.728	.686	-.006	.256	E.290	E.026	E.010	.582	R5.990
July	R1.814	E1.620	E1.041	.223	4.699	.735	-.003	.244	E.311	E.028	E.010	.593	R6.023
August	R2.071	RE1.656	E1.045	.226	4.998	.722	-.004	.224	E.309	E.028	E.009	.571	R6.286
September	R1.911	E1.587	E1.003	.216	4.718	.654	-.006	.182	E.298	E.027	E.009	.516	R5.882
October	2.058	E1.637	E1.046	.223	4.964	.587	-.004	.175	E.311	E.028	E.010	.524	6.071
10-Month Total	19.199	E16.030	E10.312	2.220	47.762	6.655	-.048	2.397	E3.019	E.259	E.098	5.773	60.142
1999 10-Month Total	19.419	15.984	10.343	2.082	47.828	6.364	-.055	2.825	E2.900	E.307	E.094	6.127	60.264
1998 10-Month Total	19.788	16.140	11.080	2.031	49.040	5.883	-.041	E2.873	E2.498	E.272	E.087	5.730	60.612

[a] End-use consumption, and electric utility and nonutility electricity net generation.
[b] Includes lease condensate.
[c] Pumped storage facility production minus energy used for pumping.
[d] Ethanol blended into motor gasoline.
[e] Included in conventional hydroelectric power.
[f] Beginning in 1989, includes electricity generated by nonutility nuclear units.
R=Revised. NA=Not available. E=Estimate. (s)=Less than +0.5 trillion Btu and greater than -0.5 trillion Btu.

Notes: • See Note 1 at end of section. • Totals may not equal sum of components due to independent rounding. • Geographic coverage is the 50 States and the District of Columbia.

Sources: • **Coal:** Tables 6.1 and A5. • **Natural Gas (Dry):** Tables 4.1 and A4. • **Crude Oil and Natural Gas Plant Liquids:** Tables 3.1a and A2. • **Nuclear Electric Power:** Tables 8.1 and A6. • **Hydroelectric Pumped Storage:** Tables 7.2 and A6. • **Renewable Energy:** Tables E2, E3a, and E3b.

This table is redesigned to incorporate additional renewable energy data. See Appendix E for further information.

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Table 1.1 Energy Overview, 1949-1999

(Quadrillion Btu)

Year	Production				Imports		Exports		Adjustments [8]	Consumption			
	Fossil Fuels [1]	Nuclear Electric Power [2]	Renewable Energy [3]	Total [4]	Petroleum [5]	Total [6]	Coal	Total [7]		Fossil Fuels [9]	Nuclear Electric Power [2]	Renewable Energy [3]	Total [10]
1949	28.75	0	2.97	31.72	1.43	1.47	0.88	1.59	0.40	29.00	0	3.00	32.00
1950	32.56	0	2.98	35.54	1.89	1.93	0.79	1.47	-1.37	31.63	0	3.00	34.63
1951	35.79	0	2.96	38.75	1.87	1.92	1.68	2.62	-1.05	34.01	0	2.99	37.00
1952	34.98	0	2.94	37.92	2.11	2.17	1.40	2.37	-0.95	33.80	0	2.97	36.77
1953	35.35	0	2.83	38.18	2.28	2.34	0.98	1.87	-0.96	34.83	0	2.86	37.68
1954	33.76	0	2.75	36.52	2.32	2.37	0.91	1.70	-0.53	33.88	0	2.78	36.66
1955	37.36	0	2.78	40.15	2.75	2.83	1.46	2.29	-0.44	37.41	0	2.83	40.24
1956	39.77	0	2.85	42.62	3.17	3.25	1.98	2.95	-1.13	38.89	0	2.90	41.79
1957	40.13	(s)	2.85	42.98	3.46	3.57	2.17	3.45	-1.29	38.93	(s)	2.89	41.82
1958	37.22	(s)	2.92	40.13	3.72	3.92	1.42	2.08	-0.32	38.72	(s)	2.95	41.67
1959	39.05	(s)	2.90	41.95	3.91	4.11	1.05	1.54	-1.03	40.55	(s)	2.94	43.49
1960	39.87	0.01	2.93	42.80	4.00	4.23	1.02	1.48	-0.43	42.14	0.01	2.98	45.12
1961	40.31	0.02	2.95	43.28	4.19	4.46	0.98	1.38	-0.60	42.76	0.02	2.98	45.76
1962	41.73	0.03	3.12	44.88	4.56	5.01	1.08	1.48	-0.57	44.68	0.03	3.12	47.83
1963	44.04	0.04	3.10	47.17	4.65	5.10	1.36	1.85	-0.78	46.51	0.04	3.10	49.65
1964	45.79	0.04	3.23	49.06	4.96	5.49	1.34	1.84	-0.87	48.54	0.04	3.25	51.83
1965	47.23	0.04	3.40	50.68	5.40	5.92	1.38	1.85	-0.72	50.58	0.04	3.40	54.02
1966	50.04	0.06	3.43	53.53	5.63	6.18	1.35	1.85	-0.83	53.51	0.06	3.45	57.02
1967	52.60	0.09	3.69	56.38	5.56	6.19	1.35	2.15	-1.52	55.13	0.09	3.69	58.91
1968	54.31	0.14	3.78	58.23	6.21	6.93	1.38	2.03	-0.71	58.50	0.14	3.77	62.41
1969	56.29	0.15	4.10	60.54	6.90	7.71	1.53	2.15	-0.47	61.36	0.15	4.11	65.63
1970	59.19	0.24	R4.07	63.50	7.47	8.39	1.94	2.66	-1.37	63.52	0.24	R4.09	67.86
1971	58.04	0.41	4.27	62.72	8.54	9.58	1.55	2.18	-0.82	64.60	0.41	R4.30	69.31
1972	58.94	0.58	4.40	63.92	10.30	11.46	1.53	2.14	-0.48	67.70	0.58	4.48	72.76
1973	58.24	0.91	4.43	63.58	13.47	14.73	1.43	2.05	-0.46	70.32	0.91	4.58	75.81
1974	56.33	1.27	4.77	62.37	13.13	14.41	1.62	2.22	-0.48	67.91	1.27	4.90	74.08
1975	54.73	1.90	4.72	R61.35	12.95	14.11	1.76	2.36	-1.07	65.35	1.90	4.79	72.04
1976	54.72	2.11	4.77	61.60	15.67	16.84	1.60	2.19	-0.18	69.10	2.11	4.86	76.07
1977	55.10	2.70	4.25	62.05	18.76	20.09	1.44	2.07	-1.95	70.99	2.70	4.43	78.12
1978	55.07	3.02	5.04	63.14	17.82	19.25	1.08	1.93	-0.34	71.86	3.02	5.24	80.12
1979	58.01	2.78	R5.16	65.95	17.93	19.62	1.75	2.87	-1.65	72.89	2.78	R5.37	81.04
1980	59.01	2.74	5.49	67.24	14.66	15.97	2.42	3.72	-1.05	69.98	2.74	5.71	R78.43
1981	58.53	3.01	5.47	67.01	12.64	13.97	2.94	4.33	-0.08	67.75	3.01	5.82	76.57
1982	57.46	3.13	5.99	R66.57	10.78	12.09	2.79	4.63	-0.59	64.04	3.13	6.29	73.44
1983	54.42	3.20	6.49	64.11	10.65	12.03	2.04	3.72	0.90	63.29	3.20	6.86	73.32
1984	58.85	3.55	6.43	68.83	11.43	12.77	2.15	3.80	-0.82	66.62	3.55	6.84	76.97
1985	57.54	4.15	R6.03	R67.72	10.61	12.10	2.44	4.23	1.19	66.22	4.15	R6.46	R76.78
1986	56.58	4.47	R6.13	R67.18	13.20	14.44	2.25	4.06	-0.50	66.15	4.47	R6.51	R77.08
1987	57.17	4.91	R5.69	R67.76	14.18	15.76	2.09	3.85	-0.04	68.63	4.91	R6.17	R79.63
1988	57.87	5.66	R5.49	R69.03	15.75	17.56	2.50	4.42	0.89	71.66	5.66	R5.82	R83.07
1989	57.47	5.68	R,11 6.32	R,11 69.46	17.16	18.96	2.64	4.77	0.94	72.55	5.68	R,11 6.47	R,11 84.59
1990	58.56	6.16	R6.16	R70.85	17.12	R18.95	2.77	R4.87	-0.75	71.96	6.16	R6.26	R84.19
1991	57.83	6.58	R6.15	R70.51	16.35	R18.50	2.85	R5.16	0.21	71.23	6.58	R6.37	R84.06
1992	57.59	6.61	R5.90	R70.06	16.97	R19.58	2.68	R4.96	0.83	R72.85	6.61	R6.17	R85.51
1993	55.74	6.52	6.15	68.37	18.51	R21.50	1.96	R4.28	R1.73	R74.47	6.52	R6.42	87.31
1994	57.95	6.84	6.08	R70.83	R19.24	R22.73	1.88	R4.08	R-0.25	R75.98	6.84	6.39	R89.23
1995	57.46	7.18	6.68	71.29	18.86	R22.54	2.32	R4.54	R1.65	R76.80	7.18	R6.96	R90.94
1996	R58.30	7.17	7.15	R72.58	20.27	R23.99	2.37	R4.66	R1.99	R79.28	7.17	7.48	R93.91
1997	58.76	6.68	R7.14	R72.53	R21.74	R25.52	2.19	R4.57	R0.84	R80.29	6.68	R7.36	R94.32
1998	R58.66	7.16	R6.78	R72.55	R22.91	R26.86	R2.05	R4.34	R-0.49	R80.51	7.16	R6.98	R94.57
1999P	57.67	7.73	7.18	72.52	22.53	26.92	1.53	3.82	0.98	81.56	7.73	7.37	96.60

[1] Coal, natural gas (dry), crude oil, and natural gas plant liquids.
[2] See Note 1 at end of section.
[3] Conventional hydroelectric power, geothermal, wood, waste, ethanol blended into motor gasoline, solar, and wind.
[4] Also includes hydroelectric pumped storage.
[5] Crude oil and petroleum products.
[6] Also includes natural gas, coal, coal coke, and electricity.
[7] Also includes natural gas, petroleum, electricity, and coal coke.
[8] A balancing item. Includes stock changes, losses, gains, miscellaneous blending components, and unaccounted-for supply.
[9] Coal, coal coke net imports, natural gas, and petroleum.
[10] From 1989, includes net imported electricity from nonrenewable sources and hydroelectric pumped storage, and removes ethanol blended into motor gasoline, which would otherwise be double counted in both fossil fuels and renewable energy.
[11] There is a discontinuity in this time series between 1988 and 1989 due to the expanded coverage of renewable energy beginning in 1989. See Tables 10.1 and 10.2.

R=Revised. P=Preliminary. (s)=Less than 0.005 quadrillion Btu.
Note: Totals may not equal sum of components due to independent rounding.
Sources: See end of section.

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Table 1.2 Energy Production by Source, 1949-1999

(Quadrillion Btu)

Year	Fossil Fuels					Nuclear Electric Power [2]	Hydroelectric Pumped Storage [3]	Renewable Energy						Total
	Coal	Natural Gas (Dry)	Crude Oil [1]	Natural Gas Plant Liquids	Total Fossil Fuels			Conventional Hydroelectric Power	Geothermal	Wood and Waste [4]	Solar	Wind	Total Renewable Energy	
1949	11.974	5.377	10.683	0.714	28.748	0	(5)	1.425	0	1.549	0	0	2.974	31.722
1950	14.060	6.233	11.447	0.823	32.563	0	(5)	1.415	0	1.562	0	0	2.978	35.540
1951	14.419	7.416	13.037	0.920	35.792	0	(5)	1.424	0	1.535	0	0	2.958	38.751
1952	12.734	7.964	13.281	0.998	34.977	0	(5)	1.466	0	1.474	0	0	2.940	37.917
1953	12.278	8.339	13.671	1.062	35.349	0	(5)	1.413	0	1.419	0	0	2.831	38.181
1954	10.542	8.682	13.427	1.113	33.764	0	(5)	1.360	0	1.394	0	0	2.754	36.518
1955	12.370	9.345	14.410	1.240	37.364	0	(5)	1.360	0	1.424	0	0	2.784	40.148
1956	13.306	10.002	15.180	1.283	39.771	0	(5)	1.435	0	1.416	0	0	2.851	42.622
1957	13.061	10.605	15.178	1.289	40.133	(s)	(5)	1.516	0	1.334	0	0	2.849	42.983
1958	10.783	10.942	14.204	1.287	37.216	0.002	(5)	1.592	0	1.323	0	0	2.915	40.133
1959	10.778	11.952	14.933	1.383	39.045	0.002	(5)	1.548	0	1.353	0	0	2.901	41.949
1960	10.817	12.656	14.935	1.461	39.869	0.006	(5)	1.608	0.001	1.320	0	NA	2.929	42.804
1961	10.447	13.105	15.206	1.549	40.307	0.020	(5)	1.656	0.002	1.295	0	NA	2.953	43.280
1962	10.901	13.717	15.522	1.593	41.732	0.026	(5)	1.816	0.002	1.300	0	NA	3.119	44.877
1963	11.849	14.513	15.966	1.709	44.037	0.038	(5)	1.771	0.004	1.323	0	NA	3.098	47.174
1964	12.524	15.298	16.164	1.803	45.789	0.040	(5)	1.886	0.005	1.337	0	NA	3.228	49.056
1965	13.055	15.775	16.521	1.883	47.235	0.043	(5)	2.059	0.004	1.335	0	NA	3.398	50.676
1966	13.468	17.011	17.561	1.996	50.035	0.064	(5)	2.062	0.004	1.369	0	NA	3.435	53.534
1967	13.825	17.943	18.651	2.177	52.597	0.088	(5)	2.347	0.007	1.340	0	NA	3.694	56.379
1968	13.609	19.068	19.308	2.321	54.306	0.142	(5)	2.349	0.009	1.419	0	NA	3.778	58.225
1969	13.863	20.446	19.556	2.420	56.286	0.154	(5)	2.648	0.013	1.440	0	NA	4.102	60.541
1970	14.607	21.666	20.401	2.512	59.186	0.239	(5)	2.634	0.011	R1.429	0	NA	R4.074	R63.499
1971	13.186	22.280	20.033	2.544	58.042	0.413	(5)	2.824	0.012	R1.430	0	NA	R4.266	R62.721
1972	14.092	22.208	20.041	2.598	58.938	0.584	(5)	2.864	0.031	R1.501	0	NA	R4.396	R63.918
1973	13.992	22.187	19.493	2.569	58.241	0.910	(5)	2.861	0.043	R1.527	0	NA	R4.431	R63.583
1974	14.074	21.210	18.575	2.471	56.331	1.272	(5)	3.177	0.053	R1.538	0	NA	R4.767	R62.370
1975	14.989	19.640	17.729	2.374	54.733	1.900	(5)	3.155	0.070	R1.497	0	NA	R4.722	R61.355
1976	15.654	19.480	17.262	2.327	54.723	2.111	(5)	2.976	0.078	R1.711	0	NA	R4.766	R61.600
1977	15.755	19.565	17.454	2.327	55.101	2.702	(5)	2.333	0.077	R1.837	0	NA	R4.247	R62.050
1978	14.910	19.485	18.434	2.245	55.074	3.024	(5)	2.937	0.064	R2.036	0	NA	R5.037	R63.136
1979	17.540	20.076	18.104	2.286	58.006	2.776	(5)	2.931	0.084	R2.150	0	NA	R5.164	R65.946
1980	18.598	19.908	18.249	2.254	59.008	2.739	(5)	2.900	0.110	R2.483	0	NA	R5.493	R67.240
1981	18.377	19.699	18.146	2.307	58.529	3.008	(5)	2.758	0.123	2.590	0	NA	5.471	67.007
1982	18.639	18.319	18.309	2.191	57.458	3.131	(5)	3.266	0.105	R2.615	0	NA	R5.985	R66.574
1983	17.247	16.593	18.392	2.184	54.416	3.203	(5)	3.527	0.129	2.831	0	(s)	6.488	64.106
1984	19.719	18.008	18.848	2.274	58.849	3.553	(5)	3.386	0.165	2.880	0	(s)	6.431	68.832
1985	19.325	16.980	18.992	2.241	57.539	4.149	(5)	2.970	0.198	R2.862	0	(s)	R6.030	R67.718
1986	19.509	16.541	18.376	2.149	56.575	4.471	(5)	3.071	0.219	R2.840	0	(s)	R6.131	R67.177
1987	20.141	17.136	17.675	2.215	57.167	4.906	(5)	2.635	0.229	R2.822	0	(s)	R5.686	R67.759
1988	20.738	17.599	17.279	2.260	57.875	5.661	(5)	2.334	0.217	R2.940	0	(s)	R5.491	R69.028
1989	21.346	17.847	16.117	2.158	57.468	5.677	(5)	R2.856	R0.327	R3.050	R0.059	R0.024	R6.316	R69.461
1990	22.456	18.362	15.571	2.175	58.564	R6.162	-0.036	R3.049	R0.348	R2.665	0.063	R0.032	R6.157	R70.847
1991	21.594	18.229	15.701	2.306	57.829	R6.580	-0.047	R3.022	R0.353	R2.679	0.066	R0.032	R6.152	R70.513
1992	21.629	18.375	15.223	2.363	57.590	R6.608	-0.043	2.618	0.361	R2.826	0.068	0.030	R5.903	R70.058
1993	20.249	18.584	14.494	2.408	55.736	R6.520	-0.042	2.893	0.375	R2.782	0.071	0.031	R6.152	R68.366
1994	22.111	19.348	14.103	2.391	57.952	R6.838	-0.035	2.685	0.370	R2.914	0.072	0.036	R6.077	R70.833
1995	22.029	19.101	13.887	2.442	57.458	7.177	-0.028	3.209	0.321	R3.044	0.073	0.033	R6.679	R71.287
1996	22.684	R19.363	13.723	2.530	R58.299	7.168	-0.032	R3.594	0.339	R3.104	0.075	0.035	R7.147	R72.582
1997	23.211	19.394	13.658	2.495	58.758	6.678	-0.042	R3.720	R0.327	R2.982	0.074	R0.034	R7.138	R72.532
1998	R23.719	R19.288	R13.235	R2.420	R58.662	7.157	-0.046	R3.347	R0.334	R2.991	0.074	R0.031	R6.778	R72.550
1999P	23.328	19.295	12.544	2.506	57.673	7.733	-0.063	3.226	0.327	3.514	0.076	0.038	7.181	72.523

[1] Includes lease condensate.
[2] See Note 1 at end of section.
[3] Represents total pumped storage facility production minus energy used for pumping.
[4] Values are estimated. For all years, includes wood consumption in all sectors (see Table 10.4). Beginning in 1970, includes electric utility waste consumption (see Table 8.3). Beginning in 1981, includes industrial sector waste consumption, and transportation sector use of ethanol blended into motor gasoline (see Table 10.3). Beginning in 1989, includes expanded coverage of nonutility wood and waste consumption (see Table 8.4).
[5] Through 1989, pumped storage is included in conventional hydroelectric power.
[6] Not all data were available; therefore, values were interpolated.
[7] There is a discontinuity in this time series between 1988 and 1989 due to the expanded coverage of renewable energy beginning in 1989. See Tables 10.1 and 10.2.
[8] There is a discontinuity in this time series between 1989 and 1990; beginning in 1990, pumped storage is removed.

R=Revised. P=Preliminary. (s)=Less than 0.0005 quadrillion Btu. NA=Not available.
Note: Totals may not equal sum of components due to independent rounding.
Web Page: http://www.eia.doe.gov/fueloverview.html.
Sources: See end of section.

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Table 13. Natural Gas Production, Transmission, and Consumption by State, 1967-1999
(Million Cubic Feet)

State	Marketed Production	Extraction Loss	Balancing Item	Net Interstate Movements	Net Movements Across U.S. Borders	Net Storage Changes	Supplemental Gas Supplies	Consumption
				1967				
Alabama	248	0	-1,113	255,041	0	0	NA	254,176
Alaska	14,438	0	-2,549	0	0	0	NA	11,889
Arizona	1,255	0	-1,219	162,446	-3,716	0	NA	158,766
Arkansas	116,522	3,499	-14,927	197,790	0	426	NA	295,460
California	681,080	34,803	-61,228	1,329,287	0	3,204	NA	1,911,132
Colorado	116,857	4,126	-5,515	125,426	0	1,134	NA	231,508
Connecticut	0	0	-1,963	51,743	0	0	NA	49,780
D.C.	a	a	a	a	a	a	NA	a
Delaware	0	0	-514	21,871	0	294	NA	21,063
Florida	123	0	-2,031	227,439	0	0	NA	225,531
Georgia	0	0	-3,690	258,024	0	0	NA	254,334
Idaho	0	0	-372	-219,052	253,707	0	NA	34,283
Illinois	144	13,725	-22,740	1,011,169	0	31,495	NA	948,353
Indiana	198	0	-3,478	442,703	0	4,791	NA	434,632
Iowa	0	0	-4,838	290,810	0	13,122	NA	272,850
Kansas	871,971	30,480	-2,280	-390,759	0	-2,511	NA	450,963
Kentucky	89,160	11,500	-3,942	120,974	0	2,236	NA	192,464
Louisiana	5,716,857	15,177	-16,428	-4,146,147	0	44,729	NA	1,394,376
Maine[b]	0	0	-426	6,391	613	0	NA	6,578
Maryland[a]	621	0	-1,726	149,746	0	8,788	NA	139,853
Massachusetts	0	0	-2,245	130,636	0	174	NA	128,217
Michigan	33,589	3,351	-9,352	698,475	-40,418	-7,152	NA	686,095
Minnesota	0	0	-202	199,570	83,718	0	NA	283,086
Mississippi	139,497	1,127	-3,286	146,600	0	-476	NA	282,160
Missouri	121	0	-9,221	369,872	0	69	NA	360,703
Montana	25,866	744	-1,289	24,361	30,663	13,819	NA	65,038
Nebraska	8,453	1,170	-1,020	183,044	0	646	NA	188,661
Nevada	0	0	-592	35,627	0	0	NA	35,035
New Hampshire	b	b	b	b	b	b	NA	b
New Jersey	0	0	-1,033	252,509	0	-6	NA	251,482
New Mexico	1,067,510	46,149	-12,616	-752,937	0	218	NA	255,590
New York	3,837	0	-3,228	617,151	-25,912	2,728	NA	589,120
North Carolina	0	0	-1,204	99,185	0	0	NA	97,981
North Dakota	40,462	5,150	-316	-3,138	0	0	NA	31,858
Ohio	41,315	0	-2,338	925,143	0	1,299	NA	962,821
Oklahoma	1,412,952	50,952	-4,537	-881,580	0	26,505	NA	449,378
Oregon	0	0	-1,743	71,620	0	0	NA	69,877
Pennsylvania	89,966	121	-11,305	617,504	0	17,566	NA	678,478
Rhode Island	0	0	-612	19,105	0	0	NA	18,493
South Carolina	0	0	-3,973	104,512	0	0	NA	100,539
South Dakota	0	0	-129	27,864	0	0	NA	27,735
Tennessee	58	0	-6,169	238,323	0	0	NA	232,212
Texas	7,188,900	433,684	-54,449	-3,247,981	43,529	11,069	NA	3,485,246
Utah	48,965	2,633	-1,113	60,053	0	220	NA	105,052
Vermont	b	b	b	b	b	b	NA	b
Virginia	3,818	0	-2,712	114,853	0	72	NA	115,887
Washington	0	0	-1,536	-10,598	140,428	1,064	NA	127,230
West Virginia	211,460	14,150	-1,487	-34,230	0	10,515	NA	151,078
Wisconsin	0	0	-4,870	252,903	0	0	NA	248,033
Wyoming	240,074	11,993	-2,658	-153,348	0	-1,209	NA	73,284
Total	18,171,325	784,534	-296,214	0	482,612	184,829	NA	17,388,360

See footnotes at end of table.

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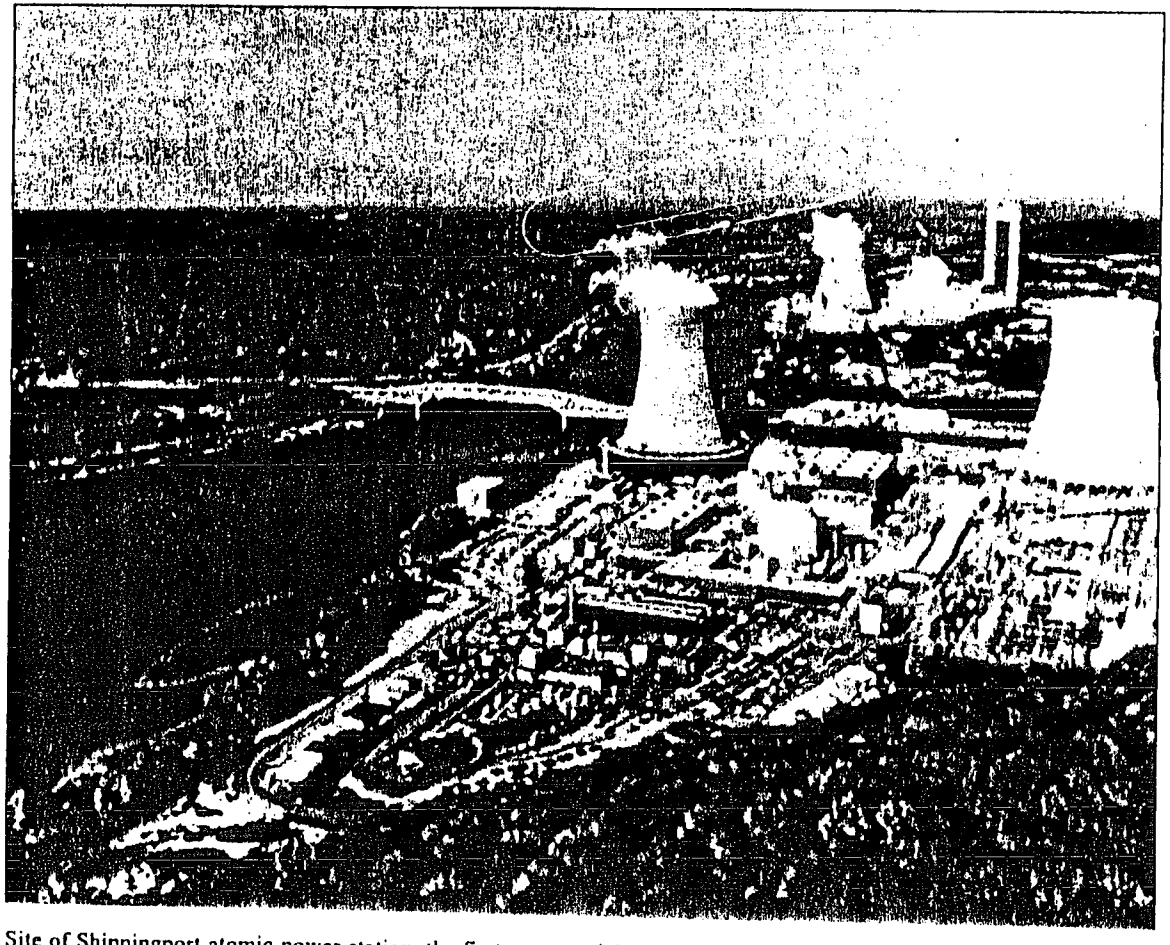
9 Nuclear Energy



Site of Shippingport atomic power station, the first commercial nuclear power plant in the United States (rectangular reactor building and foreground); background, Beaver Valley 1 and 2 nuclear power plants and Bruce Mansfield coal-fired power plant (southwestern Pennsylvania). Source: U.S. Department of Energy.

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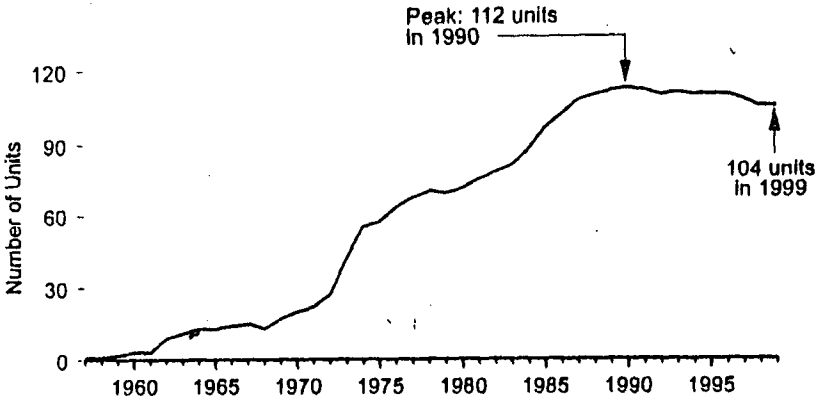
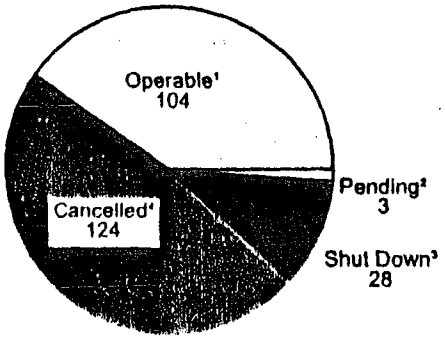
Figure 9.1 Nuclear Generating Units

Operable Units By Site, 1999

Operable Units,[1] 1957-1999

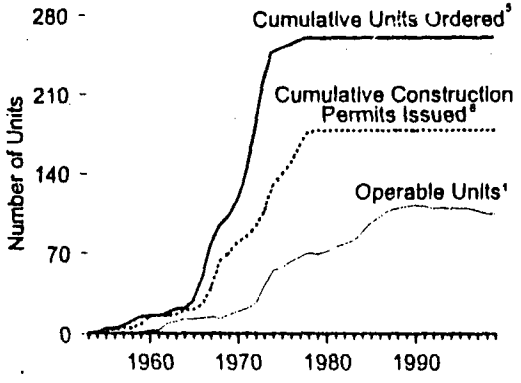


Status of All Ordered Units, 1953-1999

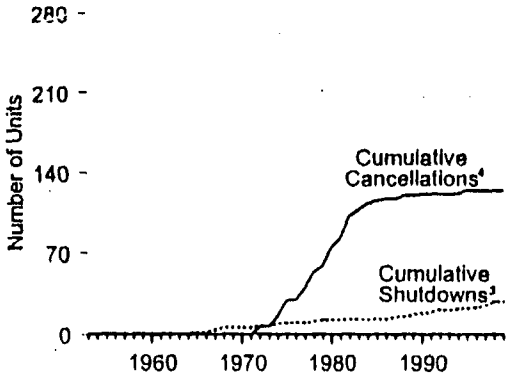


Total Units Ordered: 259

Orders, Permits, and Operable Units, 1953-1999



Cancellations and Shutdowns, 1953-1999



[1] Issuance by a regulatory authority of full-power operating license, or equivalent permission to operate.

[2] Ordered but not completed or cancelled.

[3] Ceased operation permanently.

[4] Cancellation of ordered units.

[5] Placement of an order by a utility for a nuclear steam supply system.

[6] Issuance by regulatory authority of a permit, or equivalent permission, to begin construction.

Note: Data are at end of year.

Sources: Map: Based on Energy Information Administration data. Other: Table 9.1.

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Table 9.1 Nuclear Generating Units, 1953-1999

Year	Orders [1]	Construction Permits [2]	LPOL [3]	New Operable Units [4]	Shutdowns [5]	Total Operable Units [6]	Cancellations [7]	Cumulative Cancellations
1953	1	0	0	0	0	0	0	0
1954	0	0	0	0	0	0	0	0
1955	3	1	0	0	0	0	0	0
1956	1	3	0	0	0	0	0	0
1957	2	1	1	1	0	1	0	0
1958	4	0	0	0	0	1	0	0
1959	4	3	1	1	0	2	0	0
1960	1	7	1	1	0	3	0	0
1961	0	0	0	0	0	3	0	0
1962	2	1	7	6	0	9	0	0
1963	4	1	3	2	0	11	0	0
1964	0	3	2	3	1	13	0	0
1965	7	1	0	0	0	13	0	0
1966	20	5	1	2	1	14	0	0
1967	29	14	3	3	2	15	0	0
1968	16	23	0	0	2	13	0	0
1969	9	7	4	4	0	17	0	0
1970	14	10	4	3	0	20	0	0
1971	21	4	5	2	0	22	0	0
1972	38	8	6	6	1	27	7	7
1973	42	14	12	15	0	42	0	7
1974	28	23	14	15	2	55	9	16
1975	4	9	3	2	0	57	13	29
1976	3	9	7	7	1	63	1	30
1977	4	15	4	4	0	67	10	40
1978	2	13	3	4	1	70	13	53
1979	0	2	0	0	1	69	6	59
1980	0	0	5	2	0	71	15	74
1981	0	0	3	4	0	75	9	83
1982	0	0	6	4	1	78	18	101
1983	0	0	3	3	0	81	6	107
1984	0	0	7	6	0	87	6	113
1985	0	0	7	9	0	96	2	115
1986	0	0	7	5	0	101	2	117
1987	0	0	6	8	2	107	0	117
1988	0	0	1	2	0	109	3	120
1989	0	0	3	4	2	111	0	120
1990	0	0	1	2	1	112	1	121
1991	0	0	0	0	1	111	0	121
1992	0	0	0	0	2	109	0	121
1993	0	0	1	1	0	110	0	121
1994	0	0	0	0	1	109	1	122
1995	0	0	1	0	0	109	2	124
1996	0	0	0	1	1	109	0	124
1997	0	0	0	0	2	107	0	124
1998	0	0	0	0	3	104	0	124
1999	0	0	0	0	0	104	0	124

[1] Placement of an order by a utility or government agency for a nuclear steam supply system.
[2] Issuance by regulatory authority of a permit, or equivalent permission, to begin construction. Numbers reflect permits issued in a given year, not extant permits.
[3] Low-power operating license: Issuance by regulatory authority of license, or equivalent permission, to conduct testing but not to operate at full power.
[4] Issuance by regulatory authority of full-power operating license, or equivalent permission. Units generally did not begin immediate operation. See Note 1 at end of section.
[5] Ceased operation permanently.
[6] Total of units holding full-power licenses, or equivalent permission to operate, at the end of the year. See Note 1 at end of section.
[7] Cancellation by utilities of ordered units. Does not include three units (Bellefonte 1 and 2 and Watts Bar 2) where construction has been stopped indefinitely.

R=Revised.

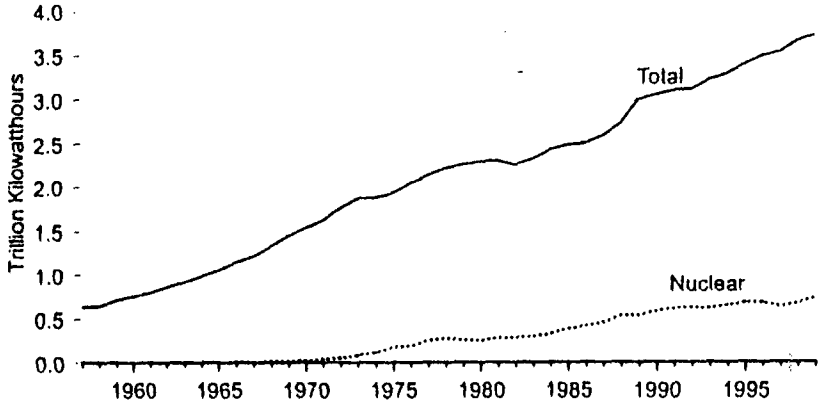
Note: Data are at end of year.

Web Page: http://www.eia.doe.gov/fuelnuclear.html.

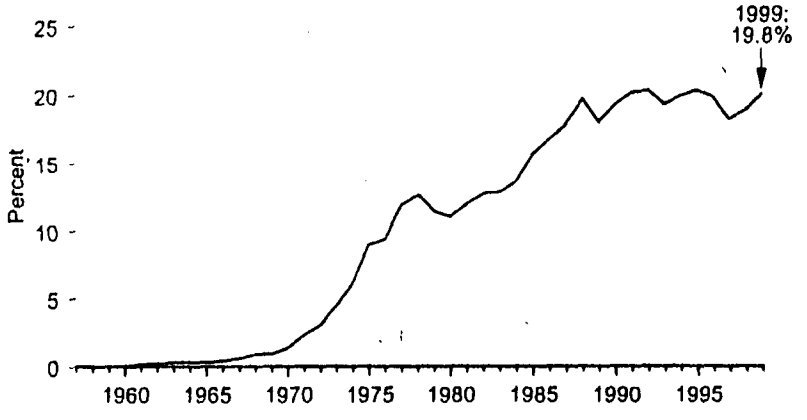
Sources: • 1953-1997: **Orders:** Energy Information Administration, *Commercial Nuclear Power 1991*, Appendix E, September 1991; Nuclear Energy Institute, *Historical Profile of U.S. Nuclear Power Development*, 1988 edition; U.S. Atomic Energy Commission, *1973 Annual Report to Congress, Volume 2, Regulatory Activities;* various utilities. **Construction Permits:** Nuclear Regulatory Commission, *Information Digest*, 1997 edition, Appendix A; Nuclear Energy Institute, *Historical Profile of U.S. Nuclear Power Development*, 1988 edition; various utility, Federal, and contractor officials. **Low-Power Operating Licenses:** Nuclear Energy Institute, *Historical Profile of U.S. Nuclear Power Development*, 1988 edition; U.S. Department of Energy, *Nuclear Reactors Built, Being Built, and Planned: 1995;* various utility, Federal, and contractor officials. **New Operable Units:** Nuclear Regulatory Commission, *Information Digest*, 1997 edition, Table 11 and Appendices A and B; various utility, Federal, and contractor officials. **Shutdowns:** Energy Information Administration, *Commercial Nuclear Power 1991*, Appendix E; Nuclear Regulatory Commission, *Information Digest*, 1998 edition; U.S. Department of Energy, *Nuclear Reactors Built, Being Built, and Planned: 1995;* Tennessee Valley Authority officials; Nuclear Regulatory Commission, "Plant Status Report." **Total Operable Units:** Running sum of new operable units minus permanent shutdowns. **Cancellations:** Energy Information Administration, *Commercial Nuclear Power 1991*, Appendix E, September 1991; Nuclear Regulatory Commission, *Information Digest*, 1997 editon, Appendix C; and Nuclear Energy Institute, *Historical Profile of U.S. Nuclear Power Development*, 1988 edition. • 1998 forward—http://www.nrc.gov/NRC/reactors.html.

Figure 9.2 Nuclear Power Plant Operations

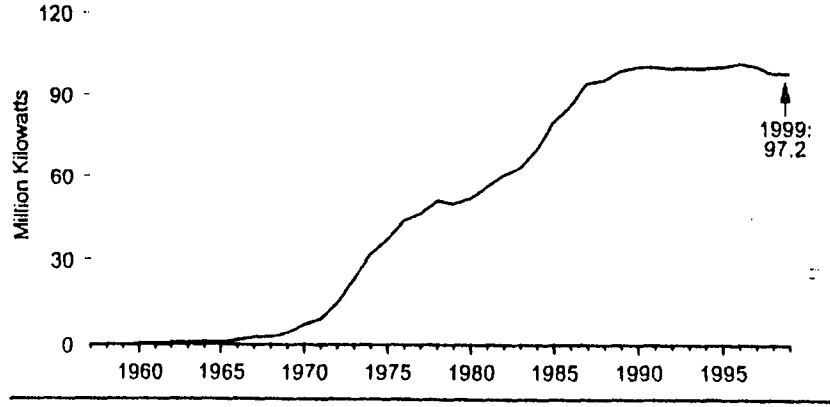
Total Electricity and Nuclear Electricity Net Generation, 1957-1999



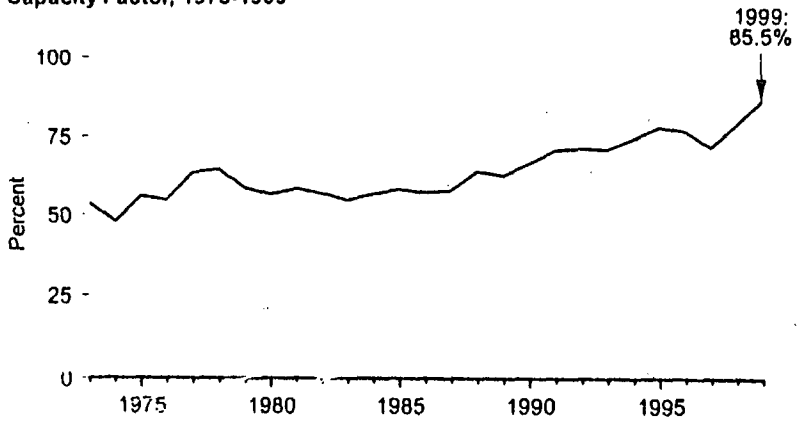
Nuclear Share of Electricity Net Generation, 1957-1999



Net Summer Capability of Operable Units, 1957-1999



Capacity Factor, 1973-1999



Sources: Tables 8.1 and 9.2.

1999Z

Table 9.2 Nuclear Power Plant Operations, 1957-1999

Year	Nuclear Electricity Net Generation	Nuclear Share of Electricity Net Generation	Net Summer Capability of Operable Units [1,2]	Capacity Factor [2]
	Billion Kilowatthours	Percent	Million Kilowatts	Percent
1957	(s)	(s)	0.1	NA
1958	0.2	(s)	0.1	NA
1959	0.2	(s)	0.1	NA
1960	0.5	0.1	0.4	NA
1961	1.7	0.2	0.4	NA
1962	2.3	0.3	0.7	NA
1963	3.2	0.4	0.8	NA
1964	3.3	0.3	0.8	NA
1965	3.7	0.3	0.8	NA
1966	5.5	0.5	1.7	NA
1967	7.7	0.6	2.7	NA
1968	12.5	0.9	2.7	NA
1969	13.9	1.0	4.4	NA
1970	21.8	1.4	7.0	NA
1971	38.1	2.4	9.0	NA
1972	54.1	3.1	14.5	NA
1973	83.5	4.5	22.7	53.5
1974	114.0	6.1	31.9	47.8
1975	172.5	9.0	37.3	55.9
1976	191.1	9.4	43.8	54.7
1977	250.9	11.8	46.3	63.3
1978	276.4	12.5	50.8	64.5
1979	255.2	11.4	49.7	58.4
1980	251.1	11.0	51.8	56.3
1981	272.7	11.9	56.0	58.2
1982	282.8	12.6	60.0	56.6
1983	293.7	12.7	63.0	54.4
1984	327.6	13.6	69.7	56.3
1985	383.7	15.5	79.4	58.0
1986	414.0	16.6	85.2	56.9
1987	455.3	17.7	93.6	57.4
1988	527.0	19.5	94.7	63.5
1989	[3]529.4	[3]17.8	[3]98.2	[3]62.2
1990	577.0	19.1	99.6	66.0
1991	612.6	19.9	99.6	70.2
1992	618.8	20.1	99.0	70.9
1993	610.4	19.1	99.1	70.5
1994	640.5	19.7	99.1	73.8
1995	673.4	20.1	99.5	77.4
1996	674.7	19.6	100.8	76.2
1997	628.6	18.0	99.7	71.1
1998	673.7	18.6	97.1	78.2
1999[P]	727.9	19.8	97.2	85.5

[1] At end of year.
[2] See Note 2 at end of section.
[3] Beginning in 1989, includes nonutility facilities.
P=Preliminary. NA=Not available. (s)=Less than 0.05 billion kilowatthours or less than 0.05 percent.

Note: The performance data shown in this table are based on a universe of reactor units that differs in some respects from the reactor universe used to profile the nuclear power industry in Table 9.1, especially in the years prior to 1973. See Note 1 at end of section for further discussion.

Sources: **Operable Units:** • 1957-1972—Federal Power Commission (FPC), Form FPC-4, "Monthly Power Plant Report." • 1972 forward—Nuclear Regulatory Commission, *Licensed Operating Reactors*, (NUREG-0020), monthly. **Electricity Generation:** • 1957-September 1977—FPC, Form FPC-4, "Monthly Power Plant Report." • October 1977-1981—Federal Energy Regulatory Commission, Form FPC-4, "Monthly Power Plant Report." • 1982 forward—Energy Information Administration (EIA), Form EIA-759, "Monthly Power Plant Report." **Net Summer Capability of Operable Units:** • 1957-1983—See Note 2 at end of section. • 1984 forward—EIA, Form EIA-860A, "Annual Electric Generator Report-Utility."

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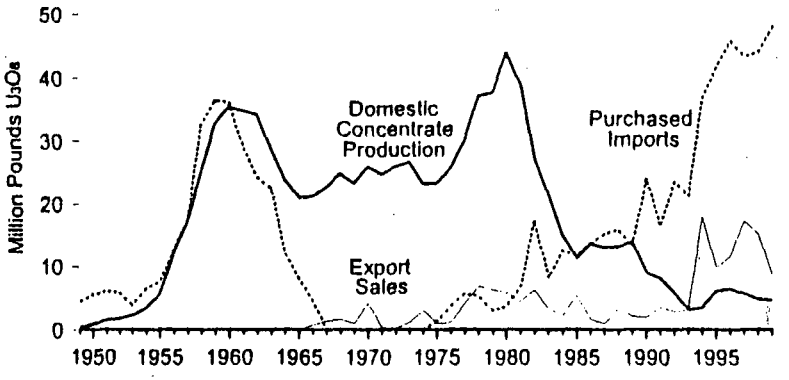
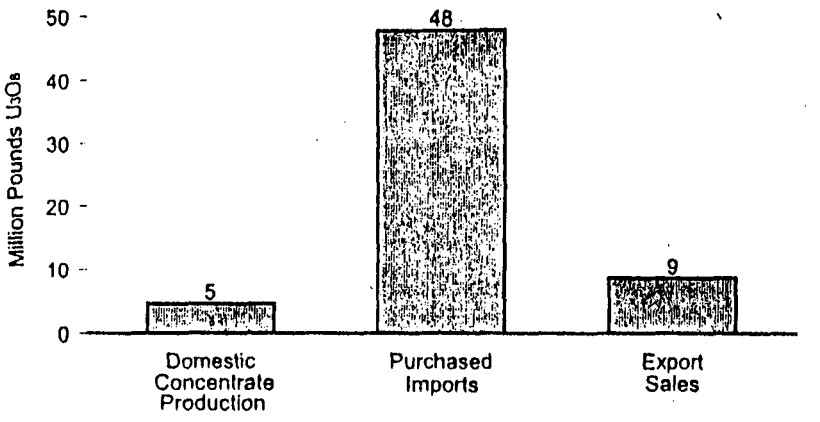
Figure 9.3 Uranium Overview

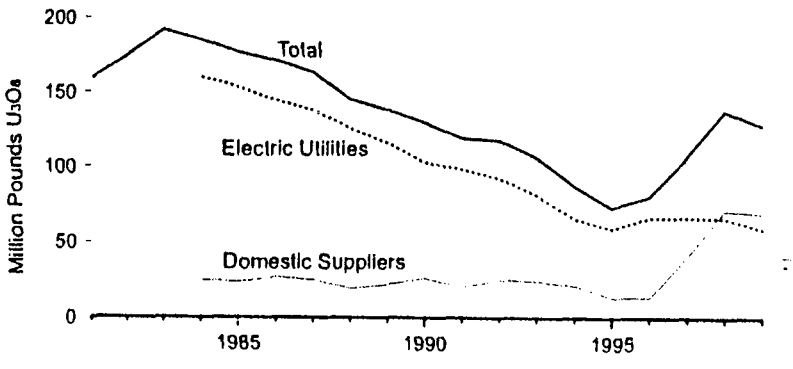
Production and Trade, 1949-1999



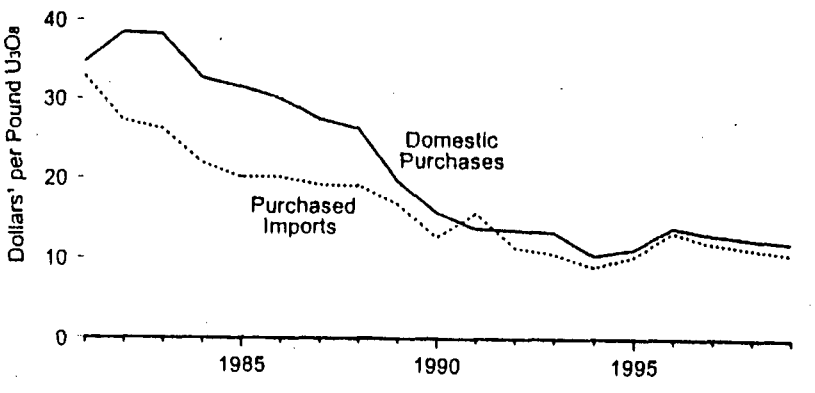
Production and Trade, 1999



Inventories, End of Year 1981-1999



Average Prices, 1981-1999



[1] Nominal dollars.

Note: Because vertical scales differ, graphs should not be compared.

Source: Table 9.3.

1994

Table 9.3 Uranium Overview, 1949-1999

Year	Domestic Concentrate Production	Purchased Imports [1]	Export [1] Sales	Utility Purchases From Domestic Suppliers	Loaded into U.S. Nuclear Reactors [2]	Inventories			Average Price	
						Domestic Suppliers	Electric Utilities	Total	Purchased Imports	Domestic Purchases
	Million Pounds U_3O_8								U.S. Dollars[3] per Pound U_3O_8	
1949	0.36	4.3	0.0	NA	NA	NA	NA	NA	NA	NA
1950	0.92	5.5	0.0	NA	NA	NA	NA	NA	NA	NA
1951	1.54	6.1	0.0	NA	NA	NA	NA	NA	NA	NA
1952	1.74	5.7	0.0	NA	NA	NA	NA	NA	NA	NA
1953	2.32	3.8	0.0	NA	NA	NA	NA	NA	NA	NA
1954	3.40	6.5	0.0	NA	NA	NA	NA	NA	NA	NA
1955	5.56	7.6	0.0	NA	NA	NA	NA	NA	NA	NA
1956	11.92	12.5	0.0	NA	NA	NA	NA	NA	NA	NA
1957	16.96	17.1	0.0	NA	NA	NA	NA	NA	NA	NA
1958	24.88	32.3	0.0	NA	NA	NA	NA	NA	NA	NA
1959	32.48	36.3	0.0	NA	NA	NA	NA	NA	NA	NA
1960	35.28	36.0	0.0	NA	NA	NA	NA	NA	NA	NA
1961	34.70	29.0	0.0	NA	NA	NA	NA	NA	NA	NA
1962	34.02	24.2	0.0	NA	NA	NA	NA	NA	NA	NA
1963	28.44	22.4	0.0	NA	NA	NA	NA	NA	NA	NA
1964	23.70	12.1	0.0	NA	NA	NA	NA	NA	NA	NA
1965	20.88	8.0	0.0	NA	NA	NA	NA	NA	NA	NA
1966	21.18	4.6	0.8	NA	NA	NA	NA	NA	NA	NA
1967	22.51	0.0	1.4	NA	NA	NA	NA	NA	—	NA
1968	24.74	0.0	1.6	NA	NA	NA	NA	NA	—	NA
1969	23.22	0.0	1.0	NA	NA	NA	NA	NA	—	NA
1970	25.81	0.0	4.2	NA	NA	NA	NA	NA	—	NA
1971	24.55	0.0	0.4	NA	NA	NA	NA	NA	—	NA
1972	25.80	0.0	0.2	NA	NA	NA	NA	NA	—	NA
1973	26.47	0.0	1.2	NA	NA	NA	NA	NA	—	NA
1974	23.06	0.0	3.0	NA	NA	NA	NA	NA	—	NA
1975	23.20	1.4	1.0	NA	NA	NA	NA	NA	NA	NA
1976	25.49	3.6	1.2	NA	NA	NA	NA	NA	NA	NA
1977	29.88	5.6	4.0	NA	NA	NA	NA	NA	NA	NA
1978	36.97	5.2	6.8	NA	NA	NA	NA	NA	NA	NA
1979	37.47	3.0	6.2	NA	NA	NA	NA	NA	NA	NA
1980	43.70	3.6	5.8	NA	NA	NA	NA	NA	NA	NA
1981	38.47	6.6	4.4	32.6	NA	NA	NA	159.2	32.90	34.65
1982	26.87	17.1	6.2	27.1	NA	NA	NA	174.8	27.23	38.37
1983	21.16	6.2	3.3	24.2	NA	NA	NA	191.8	26.16	38.21
1984	14.88	12.5	2.2	22.5	NA	25.0	160.2	185.2	21.86	32.65
1985	11.31	11.7	5.3	21.7	NA	23.7	153.2	176.9	20.08	31.43
1986	13.51	13.5	1.6	18.9	NA	27.0	144.1	171.1	20.07	30.01
1987	12.99	15.1	1.0	20.8	NA	25.4	137.8	163.2	19.14	27.37
1988	13.13	15.8	3.3	17.6	NA	19.3	125.5	144.8	19.03	26.15
1989	13.84	13.1	2.1	18.4	NA	22.2	115.8	138.1	16.75	19.56
1990	8.89	23.7	2.0	20.5	NA	26.4	102.7	129.1	12.55	15.70
1991	7.95	16.3	3.5	26.8	34.6	20.7	98.0	118.7	15.55	13.66
1992	5.65	23.3	2.8	23.4	43.0	25.2	92.1	117.3	11.34	13.45
1993	3.06	21.0	3.0	15.5	45.1	24.5	81.2	105.7	10.53	13.14
1994	3.35	36.6	17.7	22.7	40.4	21.5	65.4	86.9	8.95	10.30
1995	6.04	41.3	9.8	22.3	51.1	13.7	58.7	72.5	10.20	11.11
1996	6.32	45.4	11.5	22.9	46.2	13.9	66.1	80.0	13.15	13.81
1997	5.64	43.0	17.0	18.7	48.2	40.4	65.9	106.2	11.81	12.87
1998	4.71	43.7	15.1	20.3	R 38.2	70.7	R 65.8	R 136.5	11.19	12.31
1999P	4.61	47.6	8.5	19.2	58.8	68.8	58.2	127.0	10.55	11.88

[1] Import quantities through 1970 are reported for fiscal years. Prior to 1968, the Atomic Energy Commission was the sole purchaser of all imported U_3O_8. Trade data prior to 1982 were for transactions conducted by uranium suppliers only. For 1982 forward, transactions by uranium buyers (consumers) have been included. Buyer imports and exports prior to 1982 are believed to be small.

[2] Does not include any fuel rods removed from reactors and later reloaded.

[3] Nominal dollars.

R=Revised. P=Preliminary. NA=Not available. — = Not applicable.

Web Page: http://www.eia.doe.gov/fuelnuclear.html.

Sources: • 1949-1966—U.S. Department of Energy, Grand Junction Office, *Statistical Data of the Uranium Industry*, Report No. GJO-100, annual. • 1967-1998—Energy Information Administration (EIA), *Uranium Industry Annual*, annual reports. • 1999—EIA, *Uranium Industry Annual 1999* (May 2000), Tables H1, H2, H3, 5, 14, 27, 28, and 31.

Nuclear Energy Notes

1. In 1997 EIA undertook a major revision of Table 9.1 to more fully describe the history of the U.S. commercial nuclear power industry. The time frame was extended back to the birth of the industry in 1953, and the data categories were revised for greater relevance to current industry conditions and trends. To acquire the data for the revised categories it was necessary to develop a reactor unit database employing different sources than those used previously for Table 9.1 and still used for Table 9.2.

In Table 9.1 "commercial" means that the units contributed power to the commercial electricity grid, whether or not they were owned by an electric utility. A total of 259 units ever ordered was identified. Although most orders were placed by electric utilities, several units are or were ordered, owned, and operated wholly or in part by the Federal Government, including BONUS (Boiling Nuclear Superheater Power Station), Elk River, Experimental Breeder Reactor 2, Hallam, Hanford N, Piqua, and Shippingport.

A reactor is generally defined as operable in Table 9.1 while it possessed a full-power license from the Nuclear Regulatory Commission or its predecessor the Atomic Energy Commission, or equivalent permission to operate, at the end of the year. The definition is liberal in that it does not exclude units retaining full-power licenses during long, non-routine shutdowns. For example:

> In 1985 the five then-active Tennessee Valley Authority units (Browns Ferry 1, 2, and 3 and Sequoyah 1 and 2) were shut down under a regulatory forced outage. Browns Ferry 1 remains shut down and has been defueled, while the other units were idle for several years, restarting in 1991, 1995, 1988, and 1988, respectively. All five units are counted as operable during the shutdowns.
>
> Shippingport was shut down from 1974 through 1976 for conversion to a light-water breeder reactor, but is counted as operable until its retirement in 1982.
>
> Calvert Cliffs 2 was shut down in 1989 and 1990 for replacement of pressurizer heater sleeves but is counted as operable during those years.

Exceptions to the rule are Shoreham and Three Mile Island 2. Shoreham was granted a full-power license in April 1989, but was shut down two months later and never restarted. In 1991, the license was changed to Possession Only. Although not operable at the end of the year, Shoreham is treated as operable during 1989 and shut down in 1990, because counting it as operable and shut down in the same year would introduce a statistical discrepancy in the tallies. A major accident closed Three Mile Island 2 in 1979, and although the unit retained its full-power license for several years, it is considered permanently shut down since that year.

2. Net summer capabilities were first collected on Form EIA-860 for 1984. Units not assigned a net summer capability rating by the utility were given an estimated rating by use of a statistical relationship between installed nameplate capacity and net summer capability for each prime mover. To estimate net summer capability for 1949-1984, two methods were used. For each prime mover except nuclear and "other," net summer capability estimates were calculated in two steps. First, the unit capacity values reported on Form EIA-860 and the unit start dates contained in the 1984 Generating Unit Reference File (GURF) were used to compute preliminary aggregate estimates of annual net summer capability and installed nameplate capacity. These preliminary estimates were obtained by aggregating unit capacity values for all units in service during a given year. Next, the ratio of the preliminary capability to nameplate estimate was computed for each year and multiplied by the previously published installed nameplate capacity values to produce the final estimates of net summer capability. The net summer capability data for nuclear and "other" units were use directly from the 1984 GURF for all years. Historical aggregates were then developed by use of the unit start dates on the GURF.

Historical capacity has also been modified to estimate capability based upon the operable definition, by assuming that non-nuclear generating units became operable between 1 and 4 months prior to their commercial operation dates, depending upon the prime mover and time period. The actual operable dates for nuclear units were used.

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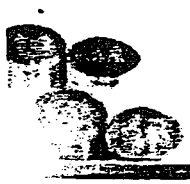

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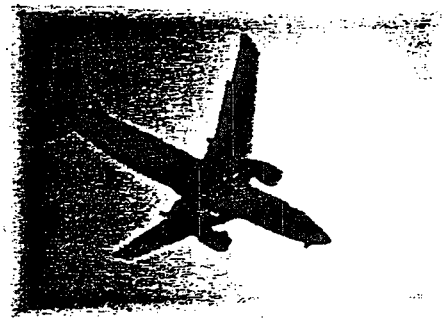

Aluminum is widely used throughout the U.S. economy, particularly in the transportation, packaging, and construction industries. As a lightweight, high-strength, and recyclable structural metal, aluminum has and will continue to play an important role in a healthy economy as applications are extended in the infrastructure, aerospace, and defense industries.

The U.S. aluminum industry is the world's largest, producing about $33 billion in products and exports annually. U.S. companies are the largest single producer of primary aluminum (aluminum made from bauxite ore). The U.S. industry produces more than 22 billion pounds of primary and secondary (made from recycled metal) metal annually and employs 85,000 people with an annual payroll of $3.4 billion. [DOC 1997] There are 23 primary aluminum smelting facilities in the United States, operated by a dozen companies [DOE 1997]. The Standard Industrial Classification (SIC) for the primary aluminum smelting industry is SIC 3334. Secondary aluminum smelting is grouped under SIC 3341; rolling, drawing, and extrusion of aluminum are grouped under several four-digit SIC codes within SIC 335 (Rolling, Drawing, and Extruding of Nonferrous Metals).

Economic Profile and Trends

Shipments from domestic aluminum producers total about $33 billion annually.

Energy Use

The aluminum industry spends more than $2 billion annually on energy, the majority of which is for electricity.

State-Level Information

The majority of U.S. primary aluminum producers are located either in the Pacific Northwest or the Ohio River Valley.

Technologies and Equipment

Primary aluminum is produced from alumina (extracted from bauxite ore) in electrolytic cells, while scrap metal is melted in furnaces to produce secondary aluminum.

Energy-Management Activities

About half of aluminum industry facilities conduct energy-management activities.

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Economic Profile and Trends

Aluminum Industry Analysis Brief

Value of Shipments | Annual Production | Labor Productivity

The aluminum industry enjoyed considerable stability in terms of demand and prices throughout the early 1970s. Since then, continuing economic fluctuations have become the norm. The world aluminum industry had a painful adjustment to the production of excess metal from Russia, but production and prices remain sensitive to events in the global marketplace. The U.S. aluminum industry employed more than 85,000 Americans in 1997, with an annual payroll of nearly $3.4 billion. In addition, around 62,000 Americans are employed in casting aluminum products. [DOC 1997, AA 1999].

The U.S. aluminum industry is the world's largest, accounting for 17% of the world's primary aluminum production in 1997 [AA 1998, 2000]. Production and shipments of primary aluminum have risen steadily since 1994. Imports of ingots and mill products rose 12.4% between 1998 and 1999; exports of the same rose 5.7% during the same time period. [AA 2000]

The aluminum industry spent over $1 billion in new capital expenditures in 1997 [DOC 1997]. It also spent in excess of $100 million for pollution control equipment in 1993 and 1994 combined, more than half of which was spent on air pollution control equipment [DOC 1994].

Industry Economic and Trade Statistics - 1997

Value of Shipments*	**$32.7 billion (based on NAICS) $27.5 billion (based on SIC)**
Employment	**85,300**
Average Hourly Wages (Production Workers)	**$16.49**
Capital Expenditures	**$1.0 billion**
R&D Expenditures**	**$353 million**
Pollution Abatement Expenditures (1994)	
Capital	**$42 million**
Operating	**$241 million**
Trade	
Imports	**$7.5 billion**
Exports	**$5.6 billion**
Balance	**-$1.9 billion**

Source: DOC 1994, DOC 1997, NSF 1997

*A NAICS-based estimate has been provided only for Value of Shipments. In the SIC system, a number of production activities related to aluminum manufacturing were grouped with that of other non-ferrous metals. However, beginning in 1997 under NAICS, such activities have been separated into aluminum-specific classifications, which allow more precise tabulation.

** Includes R&D Expenditures for all non-ferrous metal production.

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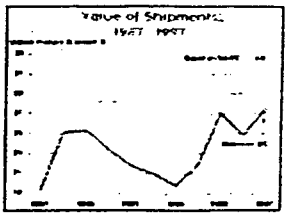
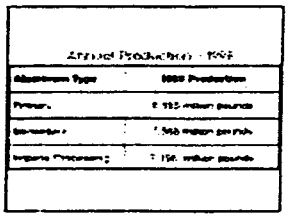
Value of Shipments

The industry and its downstream processors have a combined value of shipments of about $33 billion annually



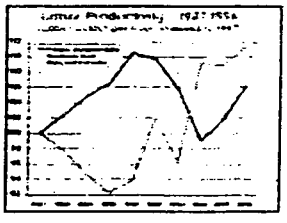
Annual Production

About 8,185 million pounds of primary aluminum and 7,588 million pounds of secondary aluminum were produced in 1998



Labor Productivity

The number of man-hours to produce a ton of primary aluminum has decreased over the last 10 years



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Energy Use

Aluminum Industry Analysis Brief

Energy Use by Fuel | Fuel Consumption by End Use | Energy Consumption by Sector | Energy Expenditures | Energy Intensity

The production of primary aluminum relies on an eletrolytic process and is thus highly electricity-intensive. According to the most recent Manufacturing Energy Consumption Survey (MECS), the U.S. aluminum industry consumed about 727 trillion Btu of energy in 1994 (including electricity losses). This amount represents slightly less than 1% of domestic energy use and 2-3% of all U.S. manufacturing energy use. According to a study sponsored by DOE, the total energy consumption associated with the production of molten primary aluminum in 1995 was 522 trillion Btu [DOE 1997].

Aluminum Industry Total Energy Use (SIC 3334 only)

(Trillion Btu)

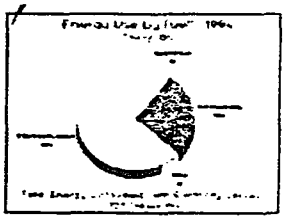
Year	Total Energy Use* (including electricity losses)	Total Energy Use (no losses)
1985	685	248
1988	727	258
1991	774	297
1994	621	241

* Includes electricity losses incurred during the distribution, generation, and transmission of electricity

Source: MECS 1985, 1988, 1991, and 1994

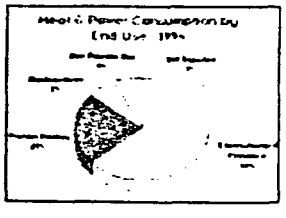
Energy Use by Fuel

Nearly 85% of the aluminum industry's energy comes from electricity (including losses)



Fuel Consumption by End Use

The vast majority of the energy is consumed during the electrolytic reduction of alumina (Al_2O_3) to aluminum



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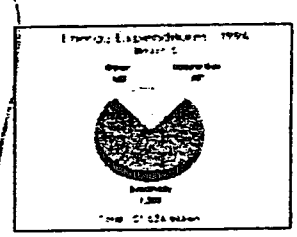
Energy Consumption by Sector

Nearly three-quarters of all energy consumed by the industry is for primary aluminum production

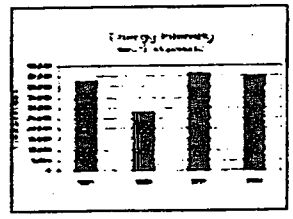
Energy Expenditures

One-third of the average cost of aluminum is for the energy required to make it



Energy Intensity

Energy intensity measures the energy consumed per dollar of products shipped



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Energy-Management Activities

Aluminum Industry Analysis Brief

Manufacturers may conduct a number of energy-management activities to improve the efficiency of energy use. In the aluminum industry, the top four reported activities in 1994 included energy audits, electricity load control, the purchase of electricity under special rate schedules (e.g., time-of-use rates), and direct machine drive. Overall, about 68% of the aluminum industry population reported engaging in at least one energy-management activity. These reporting establishments used nearly 90% of the total aluminum industry energy in 1994. [MECS 1994]

Energy-Management Activities* - 1994

Activities	Actual Establishments	% Aluminum Industry Population	% Consumed Energy for Heat & Power
Energy Audits	36	36.4	37.2
Electricity Load Control	34	34.3	50.7
Direct Machine Drive	31	31.3	31.8
Special Rate Schedule	31	31.3	29.2

Source: MECS 1994

* SIC 3334 and SIC 3353 only

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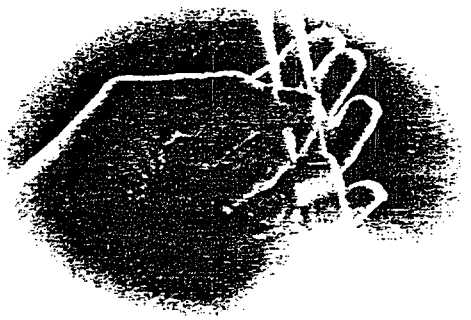
Chemical Industry Analysis Brief



The chemical industry is a keystone of the U.S. economy, converting raw materials (oil, natural gas, air, water, metals, minerals) into more than 70,000 different products. Few goods are manufactured without some input from the chemical industry. Chemicals are used to make a wide variety of consumer goods, as well as thousands of products that are essential inputs to agriculture, manufacturing, construction, and service industries. The chemical industry itself consumes 26 percent of its output. Major industrial customers include rubber and plastic products, textiles, apparel, petroleum refining, pulp and paper, and primary metals. [CMA 1998]

Chemicals is nearly a $1.5 trillion global enterprise, and the U.S. chemical industry is the world's largest producer. There are 170 chemical companies with more than 2,800 facilities abroad and 1,700 foreign subsidiaries or affiliates operating in the United States. The industry records large trade surpluses and employs more than a million people in the United States alone. The chemical industry is also the second largest consumer of energy in manufacturing and spends over $5 billion annually on pollution abatement. [CMA 1998] The broad Standard Industrial Classification (SIC) for the industry is SIC 28 and encompasses many 3- and 4-digit SIC categories.

Economic Profile and Trends

Chemical shipments are nearly $400 billion annually.

Energy Use

Chemicals is the second largest industrial user of energy.

State-Level Information

Texas, New Jersey, Louisiana, North Carolina, and Illinois are the nation's top chemical producers.

Technologies and Equipment

Distillation, catalytic, and electrochemical reactors are the workhorses of the industry.

Energy-Management Activities

Over 36% of chemical facilities conduct energy management activities.

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Economic Profile and Trends

Chemical Industry Analysis Brief

Value of Shipments | Annual Production | Labor Productivity

As a strong contributor to the U.S. economy, the chemical industry provides over 2% of the total U.S. GDP and nearly 12% of the manufacturing GDP. On a value-added basis, chemicals is the largest U.S. manufacturing sector. The industry employed more than a million people in 1997, including nearly 90,000 scientists, engineers, and technicians engaged in R&D. Over half of the industry employees are production workers earning weekly wages that are 30% greater than the manufacturing average. [CMA 1998]

The United States is the largest chemical producer in the world (over 25% of total production) and achieved a record trade surplus in 1997 of $19.2 billion. The industry continues to grow, with profits in 1997 reaching $44.8 billion, an all-time high. [CMA 1998]

The chemical industry is one of the largest U.S. private sector investors in R&D, with chemical patents accounting for 15% of the total awarded in the United States. Pharmaceuticals research accounts for more than half of R&D spending. [CMA 1998]

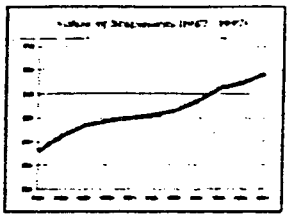
Industry Economic and Trade Statistics – 1997

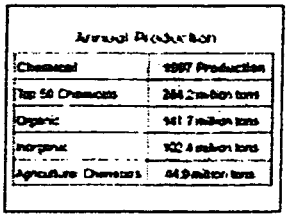
Value of Shipments	$392.2 billion
Employment	1,034,000
Average Hourly Wages (Production Workers)	$16.6
Capital Expenditures	$25.4 billion
R&D Expenditures	$18.7 billion
Pollution Abatement Expenditures	
Capital	$2.1 billion
Operating	$4.3 billion
Trade	
Imports	$50.3 billion
Exports	$69.5 billion
Balance	$19.2 billion

Source: DOC 1994, DOC 1997, CMA 1998

Value of Shipments

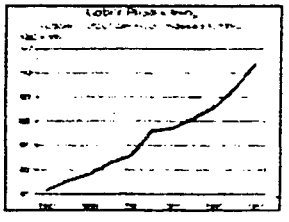
Chemical shipments are increasing 5% annually





Annual Production

Over 360 million tons of chemicals are produced every year



Labor Productivity

The labor productivity of chemical workers increased by 3% annually over the last decade

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Energy Use

Chemical Industry Analysis Brief

Energy Use by Fuel | Fuel Consumption by End Use | Energy Consumption by Sector | Energy Expenditures | Onsite Generation | Energy Intensity

The chemical industry uses energy both to supply heat and power for plant operations and as a raw material for the production of petrochemicals, plastics, and synthetic fibers. According to the most recent Manufacturing Energy Consumption Survey (MECS), the U.S. chemical industry consumed about 5.3 quads (quadrillion Btu, or 10^{15} Btu) of energy in 1994. This represents about 7% of domestic energy use and about 25% of all U.S. manufacturing energy use. Energy purchases cost the industry about $18 billion in 1994 [MECS 1994], about 5% of the value of shipments that year.

Chemical Industry Total Energy Use

(Trillion Btu)

Year	Energy Use, No Feedstocks*	Feedstocks	Total Energy Use
1985	2213	1354	3567
1988	2682	1678	4360
1991	2693	2358	5051
1994	2865	2463	5328

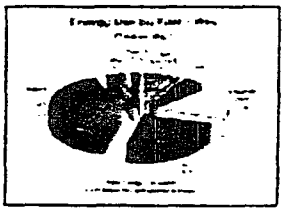
* The primary component is energy used for heat and power.

NOTE: Years prior to 1994 do not include adjustments for energy shipped off site.

Source: MECS 1985, 1988, 1991, and 1994

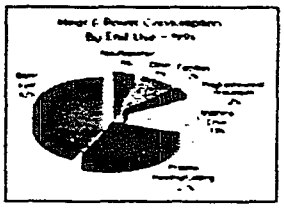
Energy Use by Fuel

Natural gas and LPG account for a large share of energy use



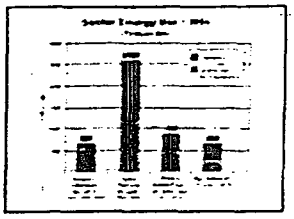
Fuel Consumption by End Use

Nearly 50% of energy is transformed into chemical products



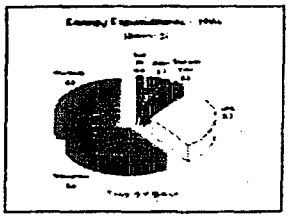
Energy Consumption by Sector

Organic chemicals consume the most energy



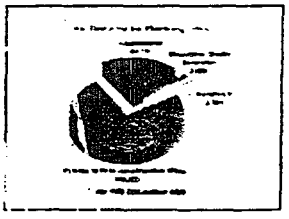
Energy Expenditures

Chemicals account for about 26% of all manufacturing energy costs



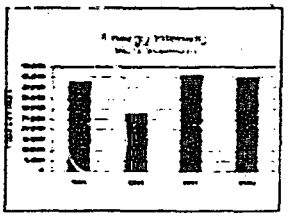
Onsite Generation

Chemical plants produce about 25% of electricity onsite



Energy Intensity

Energy intensity measures the energy consumed per dollar of products shipped



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Technologies and Equipment

Chemical Industry Analysis Brief

Cogeneration Technologies | Generic Technologies

Transforming raw materials into usable chemical products requires chemical, physical, and biological separation and synthesis processes that consume large amounts of energy for heating, cooling, or electrical power. Separations play a critical role and account for 40-70% of both capital and operating costs. The most widely used separation process is distillation, which accounts for as much as 40% of the industry's energy use [Humphrey 1997]. Chemical synthesis, predominantly heterogeneous catalytic processes, is the backbone of the industry. Process heat is integral and supports nearly all chemical operations.

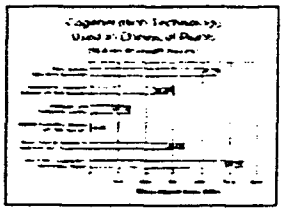
Industry-Specific Technologies

Unit Operation	Purpose	Major Technologies
Separations	Separate products, remove contaminants, dry solids	Distillation, extraction, absorption, crystallization, evaporation, drying, steam stripping or cracking, membranes
Chemical Synthesis	Synthesize chemicals, polymers, and resins	Catalytic reactions (oxidation, hydrogenation, alkylation) and polymerization (addition or suspension), hydration, hydrolysis, electrolysis
Process Heating	Drive chemical reactions and separations; can be direct or indirect	Direct heating: furnaces, kilns, dryers Indirect heating: Boilers, heat exchangers Heat transfer fluids: steam, boiling water, organic vapors, water, oils, and air

Source: DOE 1999

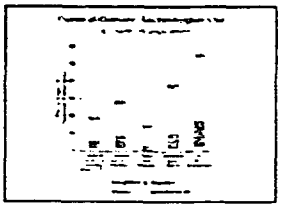
Cogeneration Technologies

Cogeneration in chemical plants often involves two or more technologies



Generic Technologies

More than half of chemical plants report using general technologies to increase efficiency



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Energy-Management Activities

Chemical Industry Analysis Brief

Manufacturers may conduct a number of energy management activities to improve the efficiency of energy use. In the chemical industry, the top four reported activities in 1994 included energy audits, electricity load control, equipment or facilities modification to improve lighting and other facility energy use, and purchase of electricity under special electricity rate schedules (e.g., interruptible or time-of-use rates). Overall, about 36% of the chemical population reported engaging in at least one energy-management activity. These reporting establishments used about 78% of the total chemical industry energy in 1994. [MECS 1994]

Energy-Management Activities - 1994

Activities	Establishments (weighted)	% Chemical Population	%Consumed Energy for Heat & Power
Energy Audits	1,745	18.2	49.7
Electricity Load Control	1,556	16.3	44.1
Equipment Installation/ Retrofit	1,259	13.2	28.0
Special Rate Schedule	1,185	12.4	43.8

Source: MECS 1994

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Forest Products Industry Analysis Brief

The U.S. forest products industry is divided into two major categories: Paper and Allied Products (SIC 26) and Lumber and Wood Products (SIC 24). These industries are often grouped together because both rely on the nation's vast forest resources for raw material. In addition, many companies that produce pulp and paper also produce lumber and wood products in integrated operations. With a timberland base of about 490 million acres, the forest products industry harvested close to 19 billion ft^3 of softwood and hardwood timber in 1998 [Miller Freeman 1998]. Almost half of the wood harvested is used for construction and building materials, and close to 30% of the wood is used to make pulp and paper [TAPPI PRESS 1998].

The United States is the world's leading producer of lumber and wood products used in residential construction and in commercial wood products such as furniture and containers. The United States is also the leader in the pulp and paper business, producing about 34 percent of the world's pulp and 29 percent of total world output of paper and paperboard [Miller Freeman 1998]. Fueling this large manufacturing sector is consumption; as the world's leading consumer of paper and paperboard products, the United States consumed close to 99 million tons in 1997 or about 738 pounds per capita [Miller Freeman 1999]. In 1997, exports totaled $14.4 billion dollars, only $123 million less than imports [AF&PA 1998].

The forest products industry is a multinational enterprise with plantations and mills around the world. With over 44,000 facilities in the United States alone (6,541 in Pulp and Paper and 37,471 in Lumber and Wood), the industry produced shipments valued at close to $262 billion in 1997. As a strong contributor to the nation's economy, the industry employs close to 1.3 million people in all regions of the country and ranks among the top 10 manufacturing industries in 46 states. Although the industry self-generated more than 56% of its energy needs in 1996, it is still the third largest user of fossil energy in the U.S. manufacturing sector. [AF&PA 1998, MECS 1994]

Economic Profile and Trends

Forest products industry shipments are close to $262 billion annually.

Energy Use

The forest products industry is the third largest industrial user of energy.

State-Level Information

Wisconsin, California, and Georgia are the nation's top three forest products producers.

Technologies and Equipment

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Forest products industries employ a variety of physical and chemical processes.

Energy-Management Activities

Almost 2,500 energy audits were performed at forest products establishments in 1994.

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Economic Profile and Trends

Forest Products Industry Analysis Brief

Value of Shipments | Annual Production | Labor Productivity

The U.S. forest products industry makes a strong contribution to the national economy, producing 1.2% of the U.S. GDP. The industry employed almost 1.3 million people in 1997, with average hourly production wages of $16.17 in the pulp and paper sector and $11.43 in lumber and wood products [DOC 1997]. The industries are highly cyclical, being dependent on commodity prices and strong consumer markets. Following a prolonged downcycle in the economic recession of the early 1990s, a time of significant downsizing and industry restructuring, the industry is posting strong production gains in the robust economy of the late 1990s. With continuing recovery of Asian and other key overseas markets, the paper industry is projected to increase product shipments by 2% annually through 2003 [Miller Freeman 1998]. To stay competitive and to develop the products and processes that will be required to comply with environmental regulations, the pulp and paper sector directs about 1% of its sales annually toward R&D on new/improved products and processes. R&D spending for the pulp and paper sector alone was over $1.5 billion in 1996. [AF&PA 1998]

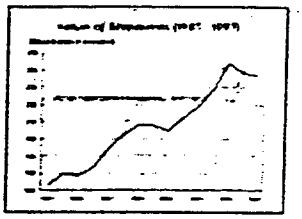
Industry Economic and Trade Statistics – 1997

Value of Shipments	**$262.3 billion**
Employment	**1,281,800**
Average Hourly Wages (Production Workers)	**$16.17 – pulp and paper** **$11.43 – lumber and wood products**
Capital Expenditures	**$12.7 billion**
R&D Expenditures	**$1.8 billion**
Pollution Abatement Expenditures (1994) Capital Operating	 **$771.3 million** **$2.2 billion**
Trade Imports Exports Balance	 **$30 billion** **$22.4 billion** **-$7.6 billion**

Source: DOC 1997, DOC 1994, NSF 1997

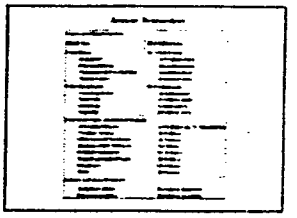
Value of Shipments

Strong production gains have been posted in the robust economy of the late 1990s



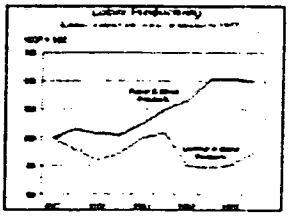
Annual Production

Total primary U.S. paper and paperboard production is about 95 million tons per year



Labor Productivity

The labor productivity of U.S. pulp and paper workers has increased 1% annually over the last decade



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Technologies and Equipment

Forest Products Industry Analysis Brief

Cogeneration Technologies | Generic Technologies

Transforming whole trees into lumber and wood products or into pulp and paper products requires significant physical, chemical, and some biological processes that are highly energy-intensive. The forest products industries alone account for over 14% of total industry energy demand; however, almost 40% of this energy is generated onsite through the use of biomass byproducts for heat and steam. The technologies used by the lumber and wood products industry differ significantly from those used by the pulp and paper industry. Principal processes in lumber and wood products include debarking, log processing, drying, product fabrication, and finishing. Major pulp and paper processes include pulping and papermaking.

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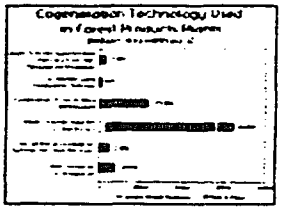
Industry-Specific Technologies

Unit Operation	Purpose	Major Technologies
Pulp & Paper (SIC 26)		
Pulping	Convert wood chips or wastepaper into fibers suitable for papermaking	Chemical (kraft, sulfite) – digesters, mechanical – refiners, semichemical – digesters & refiners
Chemical Recovery (Kraft Pulping)	Recovery of inorganic chemicals from spent pulping liquor (black liquor) and combustion of organic residuals to produce energy	Evaporation/concentration recovery boiler, causticizing, calcining (lime kiln)
Bleaching	Brighten or whiten pulps by using chemicals to selectively remove lignin during the pulping process	Chlorine dioxide, oxygen, hypochlorite, peroxide, ozone, or chlorination – upflow or downflow towers, vacuum washers, pumps, mixers
Paper Manufacture	Prepare stock from pulp, form a sheet, dewater, dry, calender, perhaps coat, and wind onto a reel	Head box, sheet forming table (Fourdrinier, twin wire), vacuum system, press section (mechanical), dryer section (heat), calender, reel
Lumber & Wood Products (SIC 24)		
Log	Production of roundwood (poles, posts, railroad ties), sawn-wood (lumber), veneers, chips (pressboard, plywood)	Computer vision mechanical sawing, cutting and chipping
Drying	Removing moisture from wood to facilitate shipping, handling, preservation and the application of treatments	Kiln or air drying
Fabrication	Additional processing to form desired end product	Specialized mechanical sawing, drilling, sanding, high pressure chemical reformation (pressparticle board), high-pressure chemical lamination (plywood), manual construction
Finishing	Preserving and treating wood for final use	Pressure treatment, chemical treatment, thermochemical treatments, coating
Both (SICs 24 & 26)		
Process Heating	To drive pressure, steam and drying applications	Direct heating: furnaces, kilns, dryers Indirect heating: boilers, heat exchangers Heat transfer fluids: steam, water, oils, air
Debarking	Removes bark from the whole log	Barking drum, ring barker

Source: Smook 1992

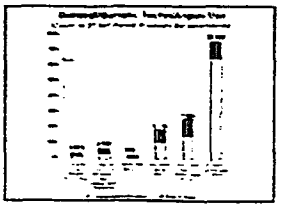
Cogeneration Technologies

Steam turbines driven by bed boilers are the most prevalent in forest product facilities



Generic Technologies

Adjustable speed motors are the most commonly used energy-saving technology



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Energy-Management Activities

Forest Products Industry Analysis Brief

Manufacturers may conduct a number of energy-management activities to improve the efficiency of energy use at their facilities. The four top management techniques used by the forest products industry include energy audits, electricity load controls, power factor correction or improvement, and facility lighting. The most commonly used of these is the energy audit, employed by almost 2,500 facilities in 1994. Approximately 20% of the forest products facilities reported using at least one type of energy-management activity. [MECS 1994]

Energy-Management Activities - 1994

Activities	Number of Establishments	% Forest Products Population	% Consumed Energy for Heat and Power
Lumber & Wood Products			
Energy Audits	1,413	6.6%	24.6%
Power Factor Correction or Improvement	1,068	5.0%	21.4%
Electricity Load Control	1,021	4.8%	19.8%
Facility Lighting	736	3.4%	11.3%
Pulp & Paper			
Energy Audits	1,034	18.5%	60.9%
Power Factor Correction or Improvement	585	10.5%	36.3%
Electricity Load Control	669	12.0%	53.0%
Facility Lighting	748	13.4%	34.7%

Source: MECS 1994

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Glass Industry Analysis Brief

The glass industry is an integral part of the American economy and everyday life. Glass is used in a myriad of consumer products ranging from food and beverage packaging, lighting products for homes and businesses, automobile windshields, and windows in buildings to insulation for buildings, fiber optics for communications, and tubes for televisions.

The U.S. glass industry is a $27 billion enterprise with both large producers and small firms playing pivotal roles in the industry. While most sectors of the glass industry have restructured and consolidated in the past twenty years, the industry still employs 150,000 workers who earn an average of $15.53 per hour. On a percent-of-shipments basis, glassmaking is one of the most energy-intensive industries; the industry spent $11.4 billion on purchased energy in 1997. [DOC 1997]

Glass covers several Standard Industrial Classification (SIC) codes, including SICs 321, 322, 323, and 3296.

Economic Profile and Trends

Shipments from glass facilities total about $27 billion annually.

Energy Use

The glass industry primarily uses energy to supply heat to glass melting furnaces in which the raw materials are melted and refined.

State-Level Information

Ohio, Pennsylvania, California, and North Carolina are among the nation's top glass producers.

Technologies and Equipment

The industry depends largely on glass furnaces for melting and downstream processing to form glass products.

Energy-Management Activities

Over 50% of glassmaking establishments conduct energy-management activities.

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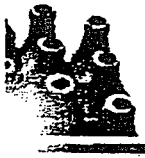


Economic Profile and Trends

Glass Industry Analysis Brief

Value of Shipments | Annual Production | Labor Productivity

The glass industry employed over 150,000 workers in 1997. Over 80% of glass industry employees are production workers with wages averaging about 20% above the manufacturing average. [DOC 1997] Intense competition between producers of glass and alternative materials has caused the industry to significantly improve its operations. The fastest growing segments of the industry have been pressed and blown glass (specialty glass), products of purchased glass, and mineral wool (fiberglass insulation).

The United States is a large producer of glass products, with annual production of around 20 million tons annually. [Ross 1999] Overall, U.S. imports and exports are roughly equal. Some glass products do not lend themselves to extensive travel before use (e.g., beverage containers, fiberglass insulation).

The glass industry is also capital-intensive, due in part to the cost of rebuilding furnaces every 8-12 years. Most of the industry's limited R&D funds are focused on developing innovative products.

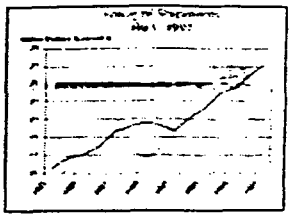
Industry Economic and Trade Statistics - 1997

Value of Shipments	**$27.2 billion**
Employment	**150,400**
Average Hourly Wages (Production Workers)	**$15.53**
Capital Expenditures	**$1.93 billion**
R&D Expenditures	**N/A**
Pollution Abatement Expenditures (1994)	
Capital	**$70.9 million**
Operating	**$213.7 million**
Trade	
Imports	**$3.439 billion**
Exports	**$3.288 billion**
Balance	**-$.151 billion**

Source: DOC 1994, DOC 1997

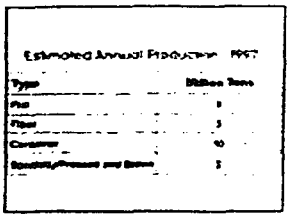
Value of Shipments

Increases in shipments have been driven by growth in specialty glass and products of purchased glass



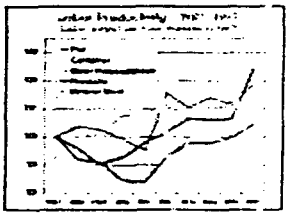
Annual Production

Over 20 million tons of glass products are produced every year



Labor Productivity

Labor productivity of glass workers has increased between 4-32% over the past decade



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Energy Use

Glass Industry Analysis Brief

Energy Use by Fuel | Fuel Consumption by End Use | Energy Consumption by Sector | Energy Expenditures | Energy Intensity

The glass industry primarily uses energy to supply heat to the glass melting furnaces in which the raw materials are melted and refined, with downstream processing used to ultimately form and finish glass. According to the most recent Manufacturing Energy Consumption Survey (MECS), the U.S. glass industry consumed 249 trillion Btu of energy in 1994, excluding energy used in manufacturing products from purchased glass. [MECS 1994] Energy purchases cost the industry $1.4 billion in 1997, about 5% of the value of shipments that year. Excluding the much less energy-intensive products of purchased glass segment, energy purchases accounted for about 7% of shipments. [DOC 1997]

Glass Industry Total Reported Energy Use

(Trillion Btu)

Year	Total Energy Use*	
1991	186	
	Flat	49
	Container	85
	Pressed & Blown*	11
	Mineral Wool	41
1994	249	
	Flat	52
	Container	83
	Pressed & Blown*	63
	Mineral Wool	51

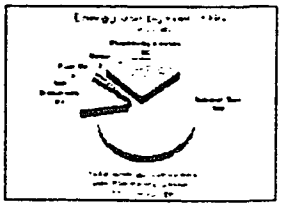
Source: MECS 1991, 1994

* Total excludes withheld data

Note: Years prior to 1994 do not include adjustments for energy shipped offsite. Does not include losses incurred during the distribution, generation, and transmission of electricity.

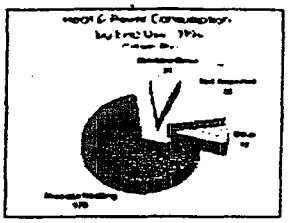
Energy Use by Fuel

Natural gas accounts for the majority of industry energy use



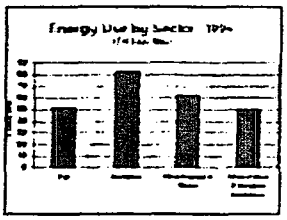
Fuel Consumption by End Use

Process heating accounts for two-thirds of industry energy use



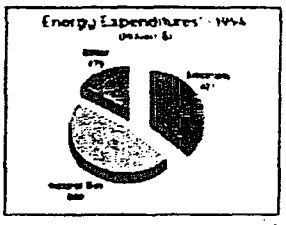
Energy Consumption by Sector

Glass container manufacturing consumes the most energy



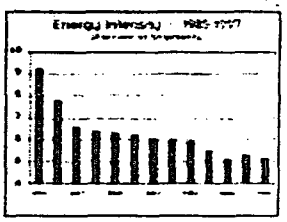
Energy Expenditures

Natural gas and electricity dominate energy expenditures



Energy Intensity

Energy intensity measures the energy consumed per dollar of product shipped



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Technologies and Equipment

Glass Industry Analysis Brief

Generic Technologies

Transforming raw materials into usable glass products requires large amounts of energy to heat and melt the material and homogenize the glass.

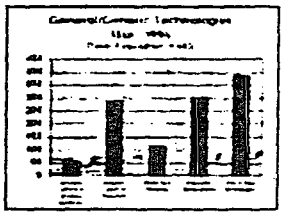
Industry-Specific Technologies

Unit Operation	Purpose	Major Technologies
Batch Preparation	Prepare raw material for melting	Wet mixing, batch agglomeration
Melting/Refining	Melt and refine glass to ensure uniformity	Side port furnace, end port furnace, regenerative furnace, electric boosting, unitmelters
Forming	Form glass	Tin bath (flat), IS machine (container), spinning (fiber)
Finishing	Modify strength and other properties	Annealing, tempering, coating, polishing

Source: Ross 1999

Generic Technologies

About 80% of glass facilities report using generic technologies to increase efficiency



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Energy-Management Activities

Glass Industry Analysis Brief

Manufacturers may conduct a number of energy-management activities to improve the efficiency of energy use. In the glass industry, the top four reported activities in 1994 included energy audits, purchase of electricity under special rate schedules (e.g., interruptible or time-of-use rates), equipment or facilities modification to improve direct machine drive, and equipment or facilities modification to improve facility lighting. Overall, about 53% of the glass population reported engaging in at least one energy-management activity. These reporting establishments were responsible for about 71% of the total glass industry energy use in 1994. [MECS 1994]

Energy-Management Activities - 1994

Activities	Establishments (weighted)	% Population	% Consumed Energy for Heat & Power
Energy Audits	184	38.1	52.6
Special Rate Schedule	126	26.1	34.5
Direct Machine Drive	122	25.3	38.6
Facility Lighting	116	24.0	34.5

Source: MECS 1994

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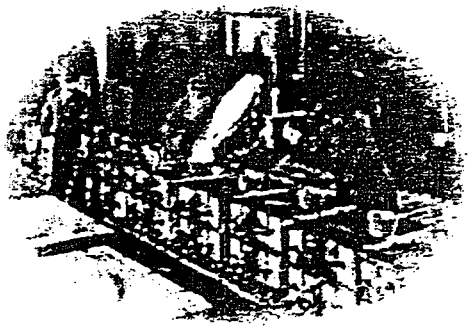
Metalcasting Industry Analysis Brief



More than 90 percent of all manufactured goods and capital equipment use metal castings as engineered components or rely on castings for their manufacture [AFS 2000]. The metalcasting industry produces both simple and complex components of infinite variety, whether they are produced once as a prototype or thousands of times for use in a manufactured product. In addition to producing components of larger products, foundries may also do machining, assembling, and coating of the castings. Major end-use applications for castings include automobiles and trucks, farm and construction equipment, railroads, pipes and fittings, valves, and engines.[AFS 1998]

Metalcasting industry sales in the United States have been in the range of $25 to $28 billion annually for the past several years, with a small trade surplus. There are close to 3,000 foundries operating in all 50 states, employing one-quarter of a million people. [AFS 2000] The industry estimates that it invests more than $1.25 billion annually in pollution prevention technologies and in meeting environmental standards. [MECS 1994] Under the Standard Industrial Classification (SIC) system, the iron and steel foundries are grouped under code 332, while nonferrous foundries and die casters are grouped under code 336.

Economic Profile and Trends

Shipments from foundries are valued at about $28 billion annually.

Energy Use

The metalcasting industry uses an estimated 200 to 250 trillion Btu annually.

State-Level Information

U.S. metalcasting facilities are found in every state but are concentrated in the Midwest.

Technologies and Equipment

More than half of U.S. castings are produced using sand casting methods, followed by permanent mold, die casting, and investment casting.

Energy-Management Activities

About half of gray and ductile iron foundries conduct energy-management activities.

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Economic Profile and Trends

Metalcasting Industry Analysis Brief

Value of Shipments | Annual Production | Labor Productivity

The metalcasting industry provides approximately 1% of the manufacturing GDP. The industry employs a quarter of a million people in all 50 states, with a total annual payroll close to $7 billion [DOC 1996]. Small- and medium-sized foundries dominate the industry, with about 80% of all foundries employing fewer than 100 people and only 6% having a staff larger than 250 [Kanicki 1998].

The United States led all other countries in the world in producing metal castings in 1997, supplying one-fifth of the world's total shipments of 67 million tons. The nearest competitor is China, with about 16% of the total. [AFS 1998]

Public and private research institutions and organizations are part of the infrastructure of the metalcasting industry. R&D expenditures in 1997 were about evenly divided between nonferrous metals and ferrous metals [NSF 1997].

Industry Economic and Trade Statistics - 1997

Value of Shipments	**$29.1 billion**
Employment	**227,100**
Average Hourly Wages (Production Workers)	**$14.43**
Capital Expenditures	**$1.4 billion**
R&D Expenditures*	**$767 million**
Pollution Abatement Expenditures (1994)	
Capital	$52.2 million
Operating	$328.4 million
Trade	
Imports	$462 million
Exports	$579 million
Balance	$117 million

Source: DOC 1994, DOC 1997, NSF 1997, AFS 2000
* Includes R&D Expenditures for all primary metal production.

Value of Shipments

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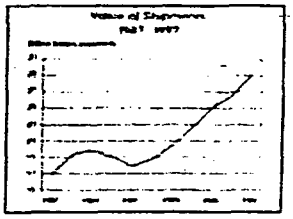
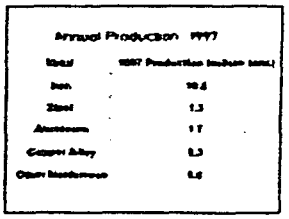
Casting shipments have increased steadily since the early 1990s



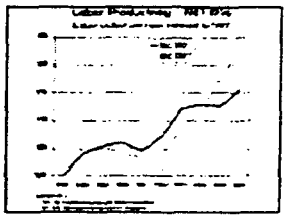
Annual Production

More than 14 million tons of castings are produced annually



Labor Productivity

The labor productivity of both ferrous and nonferrous foundry workers has increased over the last decade



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Metalcasting Industry Analysis Brief

↳ Generic Technologies

The production of castings mainly involves process heating operations that consume large amounts of fossil fuels and electricity. Process heating needs include metal melting, mold and core baking and curing, and heat treatment. Process heating accounts for more than 75% of the industry's total energy use. Other operations include mechanical cleaning and finishing steps, which rely mainly on electric motors as does material transport. Sand reclamation units rely on thermal energy to clean the individual grains within the sand mass so that the sand may be reused. [Bates 1997, DOE 1999]

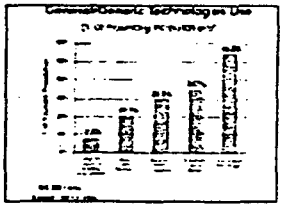
Onsite electricity cogeneration in the metalcasting industry is negligible. The majority of foundries are small establishments; many larger establishments are "captive" foundries within automotive manufacturing facilities.

Industry-Specific Technologies

Unit Operation	Purpose	Major Technologies
Process Heating	Melt metal (scrap, pig iron, virgin metal), heat molds and cores, heat treat castings, reclaim used foundry sand	Cupola furnace, electric induction furnace, arc furnace,reverberatory furnace, crucible furnace, hotbox, heat treating furnace, sand reclamation unit
Mechanical Cleaning and Finishing	Remove sand, scale, and excess metal from the casting	Rotary drum separators, blast cleaners, vibrators, cutoff machines, grinders

Generic Technologies

Slightly more than half of metalcasting industry facilities (SIC 3321 only) report using general technologies to increase efficiency



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Energy-Management Activities

Metalcasting Industry Analysis Brief

Manufacturers may conduct a number of energy-management activities to improve the efficiency of energy use. In the metalcasting industry (SIC 3321 only), the top four reported activities in 1994 included the purchase of electricity under special rate schedules (e.g., time-of-use rates), energy audits, electricity load control, and equipment rebates. Overall, about half of all foundries reported in engaging in at least one energy-management activity. [MECS 1994]

Energy-Management Activities (SIC 3321) - 1994

Activities	Establishments	% Foundry Population	% Consumed Energy for Heat & Power
Special Rate Schedule	148	28.6	44.6
Energy Audits	144	27.9	45.7
Electricity Load Control	137	26.5	52.2
Equipment Rebates	100	19.3	32.6

Source: MECS 1994

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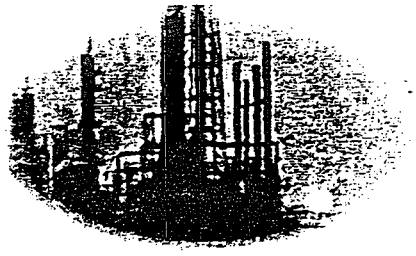

Petroleum is the single largest source of energy used in the United States. The nation uses two times more petroleum than either coal or natural gas and four times more than nuclear power or renewable energy sources. Before petroleum can be used it is sent to a refinery where it is physically, thermally, and chemically separated into fractions and then converted into finished products. About 90 percent of these products are fuels such as gasoline, aviation fuels, distillate and residual oil, liquefied petroleum gas (LPG), coke, and kerosene. Refineries also produce non-fuel products, including petrochemicals, asphalt, road oil, lubricants, solvents, and wax. Petrochemicals (ethylene, propylene, benzene, and others) are shipped to chemical plants, where they are used to manufacture chemicals and plastics. [DOE 1998]

The United States is the largest producer of refined petroleum products in the world, with 25 percent of global production and 163 operating refineries. In 1997 refineries supplied more than 6 billion barrels of finished products and employed about 65,000 people [DOE 1998, DOC 1997]. U.S. refineries are also the largest energy consumers in manufacturing and spend $5-$6 billion annually in pollution abatement costs [MECS 1994, DOE 1998]. The broad Standard Industrial Classification (SIC) for refining is SIC 29; oil and gas exploration falls under SIC 13.

Economic Profile and Trends

Refinery shipments total about $160 billion annually.

Energy Use

Petroleum refining is the largest industrial user of energy.

State-Level Information

Texas, Louisiana, California, Illinois, and Pennsylvania are the nation's top producers of refinery products.

Technologies and Equipment

Distillation, thermal and catalytic cracking, and reforming and alkylation are the workhorses of the industry.

Energy-Management Activities

Over 56% of petroleum refineries conduct energy-management activities.

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Economic Profile and Trends

Petroleum Industry Analysis Brief

Value of Shipments | Annual Production | Labor Productivity

The U.S. petroleum refining industry is a strong contributor to the economic health of the United States, providing nearly $160 billion in annual shipments and employing 65,000 people in 1997 [DOC 1997]. Up to 2 million workers are employed in nearly 200,000 service stations around the United States. The wage paid to production workers in petroleum refineries is the highest in the nation, about $24 per hour [DOC 1997].

The United States is the largest, most sophisticated producer of refined petroleum products in the world, representing about 25% of global production. At the end of 1997 the United States had 163 operating refineries and 15.6 million barrels per day of crude oil distillation capacity [DOE/EIA 1999].

The petroleum industry has been dramatically impacted over the last three decades by geopolitical disruptions and volatile world oil prices. Today refiners must deal with volatile crude prices, crude quality variability, low marketing and transport profit margins, and the increasing capital and operating costs of environmental compliance. Refiners also import about 50% of crude oil and other feedstocks from foreign producers [DOE 1998].

Industry Economic and Trade Statistics - 1997

Value of Shipments	**$157.9 billion**
Employment	**64,800**
Average Hourly Wages (Production Workers)	**$23.80**
Capital Expenditures	**$4.25 billion**
R&D Expenditures *	**$1.6 billion**
Pollution Abatement Expenditures (1994)	
Capital	**$2.5 billion**
Operating	**$2.8 billion**
Trade	
Imports	**$13.2 billion**
Exports	**$6.6 billion**
Balance	**-$6.6 billion**

Source: DOC 1997, DOC 1994, NSF 1997
* Include petroleum refining and oil and gas exploration

Value of Shipments

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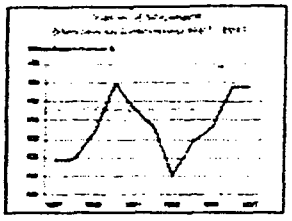
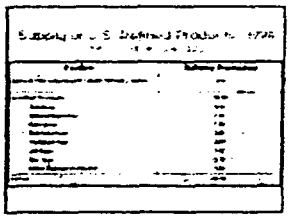
Refinery shipments have increased 4% annually over the last decade



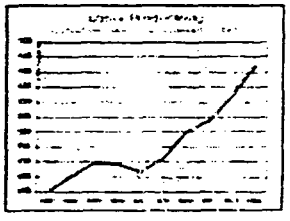
Annual Production

Over 6 billion barrels of refined products are produced each year



Labor Productivity

The labor productivity of refinery workers increased by 4% annually over the last ten years



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Petroleum Industry Analysis Brief

Cogeneration Technologies | Generic Technologies

Refinery operations fall into five major categories that involve separation, cracking, rearrangement, and blending of hydrocarbons. How major processes are used varies considerably from refinery to refinery, as well as within an individual refinery, depending on the product slate that is desired.

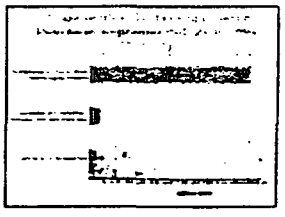
Major Petroleum Refining Processes

Category	Major Process
Topping (Separation of Crude Oil)	Atmospheric Distillation Vacuum Distillation Solvent Deasphalting
Thermal and Catalytic Cracking	Delayed Coking Fluid Coking/Flexicoking Visbreaking Catalytic Cracking Catalytic Hydrocracking
Combination/Rearrangement of Hydrocarbons	Alkylation Catalytic Reforming Polymerization Isomerization Ethers Manufacture
Treating	Catalytic Hydrotreating/Hydroprocessing Sweetening/Sulfur Removal Gas Treatment
Specialty Product Manufacture	Lube Oil Grease Asphalt

Source: DOE 1998

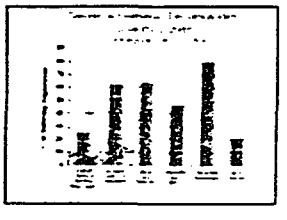
Cogeneration Technologies

Cogeneration in petroleum refineries often involves two or more technologies



Generic Technologies

More than half of petroleum refineries report using general technologies to increase efficiency



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Energy-Management Activities

Petroleum Industry Analysis Brief

Manufacturers may conduct a number of energy-management activities to improve the efficiency of energy use. In petroleum refineries, the top reported activities in 1994 included energy audits, electricity load control, and equipment modifications to improve the efficiency of process heating and steam production. Overall, about 57% of the refinery population reported engaging in at least one energy-management activity. These reporting establishments used about 82% of the total refining industry process energy in 1994. [MECS 1994]

Energy-Management Activities

Activities	Establishments (weighted)	% Refinery Population	% Consumed Energy for Heat & Power
Energy Audits	108	43.7	71.3
Electricity Load Control	72	29.1	49.0
Direct/Indirect Process Heating	68	27.5	55.4
Steam Production	63	25.5	51.1

Source: MECS 1994

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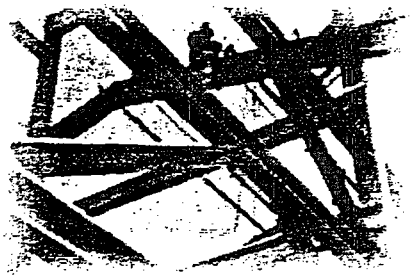

The steel industry today is vital to both economic competitiveness and national security. Steel is the backbone of bridges, skyscrapers, railroads, automobiles, and appliances. Most grades of steel in use today – particularly high-strength steels that are lighter and more versatile – were not available ten years ago. Steel is the most recyclable and recycled material in North America, with an overall recycling rate of 68 percent. [AISI 2000]

The U.S. steel industry is a $50+ billion enterprise; additional downstream processing pushes this value closer to $75 billion. There are more than 1,200 firms operating in all but a few states. The absolute number of integrated mills (producing steel in basic oxygen furnaces) has always been relatively small and is currently about 20. The industry employs approximately 154,000 people nationwide. The steel industry (including iron production) is one of the largest energy consumers in the manufacturing sector and has invested more than $7 billion in environmental controls. [AISI 1999]

The broad Standard Industrial Classification (SIC) for the industry is SIC 331 and encompasses many 4-digit SIC categories.

Economic Profile and Trends

Shipments from steel industry facilities and downstream processors are about $75 billion annually.

Energy Use

The steel industry accounts for 2-3% of total U.S. energy consumption.

State-Level Information

Ohio, Indiana, Pennsylvania, Illinois, and Michigan have the highest steel shipments.

Technologies and Equipment

The industry consists of two types of facilities – integrated (ore-based) and electric arc furnace (primarily scrap-based)

Energy-Management Activities

About half of steel industry facilities conduct energy-management activities.

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Economic Profile and Trends

Steel Industry Analysis Brief

Value of Shipments | Annual Production | Labor Productivity

The steel industry provides about 5% of the total U.S. manufacturing GDP. The industry has undergone a major transformation since its recession of the late 1980s, investing in new process and product technologies and closing older mills. Today's steel industry is technologically sophisticated, employing more than 150,000 American production workers in jobs paying about 50% above the average for all U.S. manufacturing [AISI and SMA 1998]. The industry creates an additional 50,000 jobs for downstream processing.

The United States is the largest steel producer in the world, producing 107 million tons of raw steel in 1998, nearly 13% of total world production [Iron & Steelmaker 1999]. The industry has recently experienced large levels of imports because of world steel overcapacity resulting from economic downturns in Asia and the CIS. However, the industry's return on sales for both 1997 and 1998 approached 3% [AISI 1999a].

The steel industry spends hundreds of millions of dollars annually on R&D. Over the last 20 years, the industry has invested nearly $7 billion in environmental control equipment.

Industry Economic and Trade Statistics – 1997

Value of Shipments	**$75.9 billion**
Employment	**211,900***
Average Hourly Wages (Production Workers)	**$19.61**
Capital Expenditures	**$3.34 billion**
R&D Expenditures**	**$414 million**
Pollution Abatement Expenditures (1994)	
Capital	**$226.4 million**
Operating	**$1.2 billion**
Trade	
Imports	**$16.1 billion**
Exports	**$5.5 billion**
Balance	**-$10.6 billion**

Source: DOC 1997, DOC 1994, NSF 1997

* Includes all types of employees in the steel industry and downstream industries related to steel fabrication.

** Includes R&D Expenditures for ferrous metal production and ferrous foundries.

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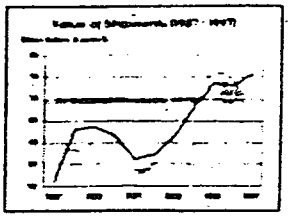
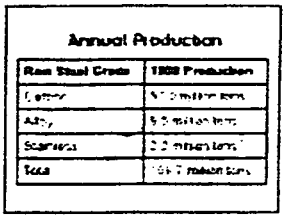
Value of Shipments

The industry and its downstream processors have a combined value of shipments exceeding $75 billion annually



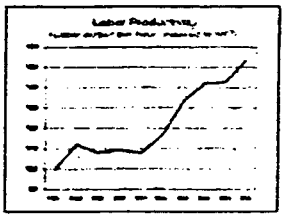
Annual Production

About 108 million tons of raw steel were produced in 1998



Labor Productivity

The number of man-hours to produce a ton of steel has been reduced by 60% in the last 15 years



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Technologies and Equipment

Steel Industry Analysis Brief

Cogeneration Technologies | Generic Technologies

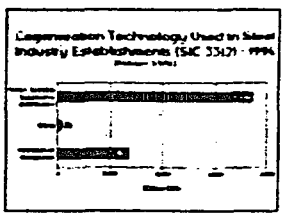
The production of molten steel mainly involves process heating operations that consume large amounts of fossil fuels (integrated steelmaking) and electricity (electric arc furnace steelmaking). Process heating accounts for more than 80% of the industry's total energy use. Forming processes use mainly electricity to drive casting machines, rolling mills, and other forming and finishing equipment.

Industry-Specific Technologies

Unit Operation	Purpose	Major Technologies
Process Heating	Drive chemical reactions, melt scrap, reheat steel prior to processing	Cokemaking, blast furnace ironmaking, BOF steelmaking, EAF steelmaking, reheating, argon oxygen decarburization
Forming	Shape steel into forms and semi-finished products and products	Casting, hot and cold rolling, extrusion, drawing, finishing, cutting

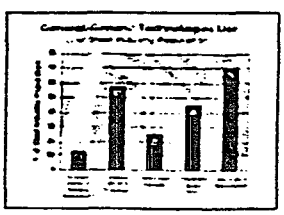
Cogeneration Technologies

Several large steel industry cogeneration projects have become operational in recent years



Generic Technologies

Nearly three-fourths of steel industry facilities report using general technologies to increase efficiency



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Energy-Management Activities

Steel Industry Analysis Brief

Manufacturers may conduct a number of energy-management activities to improve the efficiency of energy use. In the steel industry, the top four reported activities in 1994 included the purchase of electricity under special rate schedules (e.g., time-of-use rates), electricity load control, energy audits, and power factor correction or improvement. Overall, about 61% of the steel industry population reported engaging in at least one energy-management activity. These reporting establishments used nearly 94% of the total steel industry energy in 1994. [MECS 1994]

Energy-Management Activities (SIC 3312) - 1994

Activities	Establishments (weighted)	% Steel Industry Population	% Consumed Energy for Heat & Power
Energy Audits	94	33.1	67.9
Electricity Load Control	120	42.3	68.0
Power Factor Correction or Improvement	74	26.1	47.6
Special Rate Schedule	129	45.4	77.7

Source: MECS 1994

Office of Industrial Technologies

Energy Information Administration

Last Updated: 05/05/00

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Economic Profile and Trends

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Technologies and Equipment

Steel Industry Analysis Brief

Cogeneration Technologies | Generic Technologies

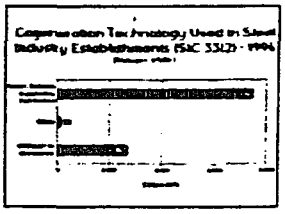
The production of molten steel mainly involves process heating operations that consume large amounts of fossil fuels (integrated steelmaking) and electricity (electric arc furnace steelmaking). Process heating accounts for more than 80% of the industry's total energy use. Forming processes use mainly electricity to drive casting machines, rolling mills, and other forming and finishing equipment.

Industry-Specific Technologies

Unit Operation	Purpose	Major Technologies
Process Heating	Drive chemical reactions, melt scrap, reheat steel prior to processing	Cokemaking, blast furnace ironmaking, BOF steelmaking, EAF steelmaking, reheating, argon oxygen decarburization
Forming	Shape steel into forms and semi-finished products and products	Casting, hot and cold rolling, extrusion, drawing, finishing, cutting

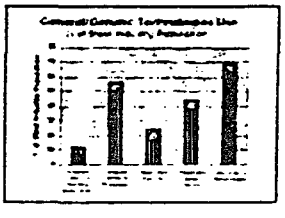
Cogeneration Technologies

Several large steel industry cogeneration projects have become operational in recent years



Generic Technologies

Nearly three-fourths of steel industry facilities report using general technologies to increase efficiency



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Summary of
Energy Policy Act Transportation Rate Study: Final Report on Coal Transportation
(U.S. Department of Energy - Energy Information Administration, November 2000, 90 pages)

This study was mandated by a provision in the Energy Policy Act of 1992. It was prompted by concerns of some in Congress that railroads would take advantage of shifts to low-sulfur coal induced by sulfur dioxide emission restrictions by raising their rates for hauling coal, especially low-sulfur coal from the Powder River Basin (PRB).

The study examined changes in transportation rates for coal purchased and delivered under supply contracts of more than one year duration shipped by rail from U.S. producers to certain U.S. investor-owned electric utilities from 1988 to 1997. Confidential rail rate data were obtained from Federal Energy Regulatory Commission (FERC) utility surveys. EIA augmented FERC data with data from the STB's Waybill Sample and industry reports.

Rail coal movements captured by the EIA study represent a majority of all rail coal deliveries to utilities, with the exact percentage varying from year to year. In 1997, for example, the quantity of coal hauled by railroads and covered by the study's augmented database was 367.2 million tons — an amount equal to 65 percent of the 563.3 million total tons of coal railroads delivered to all utilities in 1997. As expected, from 1988 to 1997 the share of low-sulfur coal rose (from 48.4 percent to 64.9 percent of movements), while the share of medium- and high-sulfur coal fell. The study noted that the rail share of total domestic coal tonnage rose from 57.5 percent in 1988 to 61.8 percent in 1997, driven largely by an increase in rail-hauled low-sulfur PRB coal.

The report's findings were unambiguous: "Although the share of coal transported by railroads increased, the average rate per ton to ship contract coal by rail fell steadily (a 25.8 percent decline) during the study period. The rates for coal in all sulfur categories were lower in 1997 than in 1988. ... The general finding of declining rates was also substantiated when the rates were calculated as a rate per ton-mile, a rate per million Btu, or rates between specific supply and demand regions. ... Clearly, the majority of the contract coal shipped by rail during this period traveled via lower real-dollar rates than in earlier years, and there is no evidence of widespread inflation of shipping rates by the major coal-hauling railroads following enactment of the [Clean Air Act Amendments of 1990]. In fact, the greatest decline in coal rail rates per ton — a 36.0 percent decline in constant dollar terms — was for low-sulfur coal, the very category over which concern may have been greatest." The report noted that "the decline in average contract coal rail rates during the study period was a response to competitive markets..."

A footnote in the study notes that "Because the rate data in this report represent regional data aggregations, they do not address alleged inequities in rates to and from isolated locations, or for "captive" shippers (with only one practical coal transportation option), or for small shippers who may not have access to technologically efficient loading equipment or may not qualify for high volume discounts." Rail detractors can be expected to seize upon this statement to dismiss the unambiguous major finding of the report: significantly lower rail rates for contract coal essentially across the board from 1988 to 1997.

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

ORDER REMOVING OBSTACLES TO INCREASED ELECTRIC GENERATION AND NATURAL GAS SUPPLY IN THE WESTERN UNITED STATES AND REQUESTING COMMENTS ON FURTHER ACTIONS TO INCREASE ENERGY SUPPLY AND DECREASE ENERGY CONSUMPTION

Docket No. EL01-47-000

COMMENTS OF THE NATIONAL HYDROPOWER ASSOCIATION

Introduction

On March 14, 2001, the Federal Energy Regulatory Commission (FERC, or the Commission) issued an Order asking for comments on ways to remove obstacles to electric generation and suggestions to increase energy supply in the Western United States. Below you will find comments of the National Hydropower Association (NHA, or the Association) concerning the section of FERC's Order which addresses the hydropower resource. NHA's comments focus on hydropower's role in providing near-, and long-term solutions to resolving the nation's energy problems by removing obstacles to increased electric generation. We thank the Commission for the opportunity to provide comments on these important matters.

NHA is the national trade association devoted exclusively to representing the interests of the hydroelectric power industry. Established in 1985, NHA has more than 120 members, including public utilities, investor-owned utilities, independent power producers, equipment manufacturers, engineering companies, consultants and law firms. NHA's membership owns or operates over 60 percent of all domestic, non-federal hydroelectric capacity and nearly 80,000 Megawatts (MW) overall.

Importance of Hydropower

Hydropower is by far our largest renewable electric generation resource – accounting for about ten percent of the nation's electricity and over 80 percent of its renewable energy. It is an emissions-free, clean, reliable source of domestic energy that possesses many valuable benefits beyond power supply. Among its benefits are transmission system reliability, water supply,

irrigation, flood control, recreation and transportation. Additionally, as an emissions-free power source, hydropower helps our nation meet its clean energy goals and reduces the number of health problems associated with air pollution. Further, as the FERC Order stated, hydropower is a critical component of the Western states' generating assets, as its combined total capacity is 24,600 MWs.

However, supply of hydropower is waning and America is in danger of losing significant hydropower capacity at a time when it is most needed. As we face rising energy prices, energy shortages and reliability concerns, now is clearly the time for policymakers at the federal level to incorporate hydropower into a national energy strategy. It is evident from the Order that FERC understands the value of hydropower and recognizes that actions can be taken to enhance the contribution of this valuable resource as we look to address the energy problems in the Western states.

Potential Hydro Capacity

In its Order, FERC suggests that many existing "projects are potentially capable of more fully using the available water resources to contribute to electric capacity and energy needs." NHA strongly agrees with this statement and also agrees with FERC that "existing projects are capable of improvements through 1) addition of new capacity units, 2) generator upgrading through rewinding, 3) turbine upgrading through runner replacement, and 4) operational improvements through such means as improving coordination of upstream and downstream plants, increasing hydraulic head, and computerization."

In the Order, FERC asks all licensees to immediately examine their hydro projects and propose any efficiency modifications that may contribute to the nation's power supply. Department of Energy statistics suggest that nationally 4,316 MWs of unutilized hydropower capacity is available at existing hydroelectric facilities. Of that potential capacity, 2,531 MWs are located in the Western states.

NHA has asked its membership to examine its projects in order to provide FERC with up-to-date capacity available through efficiency improvements and capacity additions. NHA and its members hope to present this data to FERC at its spring conference that is referenced in the Order.

Greater Operational Flexibility at Existing Commission-Licensed Projects to Address Short-Term Energy Shortages

The Commission's Order asked for comments on ways to allow for greater operating flexibility at Commission-licensed hydropower projects while protecting environmental resources. NHA interprets this request as a means to address immediate, short-term opportunities for increased generation. It was asked that the comments consider the following: 1) methods for agency involvement, 2) ways to handle and expedite Endangered Species Act consultation, and 3) criteria for modifying licenses.

20109

In order for hydropower to play a role in addressing short-term energy problems while considering the criteria set forth in the Order, NHA recommends to FERC that it offer a new, temporary standard article to all licensees in the affected region, allowing those licensees to modify operations during generation emergencies without going through the time-consuming license amendment process.

Newer licenses typically have language allowing for temporary variances from minimum flow and certain other operational requirements, in emergencies beyond the licensee's control, upon agreement between the licensee and relevant resource agencies. The following standard article, which any licensee could adopt into its license, that allowed such flexible operation in a wider range of circumstances, would be an immediate way to help alleviate the current energy and reliability crisis in the Western region:

"Through December 31, 2001, the Licensee may modify or suspend any license article, term or condition that restricts electric generation, capacity or reliability, if such modification or suspension would help alleviate an electric supply, generating, or system reliability emergency within the United States portion of the Western System Coordinating Council. Prior to implementing any modification or suspension under this article, the Licensee shall consult with the appropriate federal and state resource agencies regarding any potential environmental impacts. No later than 10 days following modification or suspension under this article, the Licensee shall notify the Commission of its actions, including: (a) identification of each affected license article, term or condition; (b) an explanation of how the provision was modified or suspended; (c) the results of consultations with resource agencies and actions taken to minimize environmental impacts; and (d) the expected, or actual, time period of the modification or suspension. Any modification or suspension under this article shall continue only so long as such emergency shall persist."

The language suggested above would allow variances where licensees would consult with the resource agencies and attempt to minimize environmental impacts. In addition, these would be temporary modifications or variances to help to resolve temporary, but very serious, problems. Further, the proposal above is optional – licensees accept it only if they so desire: FERC would offer, not require, this article as an amendment. Finally, NHA suggests that FERC consider applying such an article to all projects nationwide as capacity and reliability problems are expected this summer in areas outside of the Western states.

In addition to the language above, NHA recommends that FERC expedite the approval of any application seeking authorization to add generating capacity achieved from 1) increased efficiency, or 2) additions of new capacity for projects that have the potential to offer immediate relief. Further, NHA recommends that FERC temporarily modify its Section 4.200 regulations to allow the "Required Exhibits" provisions of Section 4.201(b) to be complied with on an as-built basis for any amendment that would not result in a change in quantity of water diversion.

20110

Incentives and Procedural Changes for New Generation at Existing Sites to Provide Longer-Term Solutions

Although maintaining a strong and viable hydropower industry is a critical component of the nation's energy strategies, hydropower development has been stagnant – almost non-existent – for a long period of time. NHA is examining FERC's capacity amendment process and will provide recommendations at the spring conference on ways to simplify and shorten the process in an effort to encourage the responsible development of new capacity.

While expediting capacity amendments to bring new hydro generation on-line as quickly as possible will help, financial incentives are needed for hydropower producers to seriously consider adding new capacity – bringing new hydro generation on-line is increasingly difficult and expensive. NHA recognizes that FERC does not have the ability or authority to provide financial incentives for new hydropower capacity at existing sites. NHA asks, however, that FERC strongly support legislative proposals that provide incentives for the development of untapped hydropower at existing sites. Through the combination of a proactive effort to more equitably balance energy and other interests (as FERC's Order addresses and we suspect legislation also will address), and the proper financial incentives (which Congress will address this session), new capacity can be added in the Western states that will provide long-term benefits.

Hydropower Licensing Reform

While the Order does not specifically ask for commenters to identify problems and suggest solutions related to FERC's hydro licensing process, NHA would like to take this opportunity to briefly comment on this matter. It is the view of our membership that a flawed licensing process has contributed to a decline in capacity and operational flexibility, a trend which is expected to continue unless action is taken by Congress, FERC and the Administration. If this problem is not resolved, the benefits offered earlier in our comments, and by FERC in its Order, will not be realized.

Problems inherent in the licensing process can be resolved by enacting legislation and implementing meaningful administrative remedies during this Congress. These remedies must require more balanced thought and circumspection by resource agencies such as the Departments of Interior and Commerce in applying their mandatory conditioning authority under Section 18 of the Federal Power Act, as well as the Department of Agriculture, under Section 4(e).

We must develop a licensing process that requires resource agencies to consider non-resource issues before exercising their review and conditioning authority. By requiring agencies to consider the economic effects of the conditions they impose on other project values and public interests, a balance can be struck and we can bring certainty to a process that desperately needs it. In addition, the process should allow licensees to review and comment on mandatory conditions during the process, limit conditions to project-caused impacts, enforce process deadlines, and improve the collaboration amongst agencies and stakeholders. Otherwise, we will continue to lose clean, reliable hydropower and exacerbate the problems we are currently experiencing.

20111

Conclusion

NHA agrees with FERC that several steps can be taken to increase operational flexibility and encourage the additions of capacity to existing hydropower projects while still providing balance and environmental protection. NHA encourages FERC to continue examining ways to address these issues and to move forward as expeditiously as possible on procedures that would allow hydropower to operate in a more flexible manner and encourage the addition of new hydropower capacity. We look forward to working with FERC, resource agencies, and Congress to find ways to enhance the hydropower resource as a means to help address our nation's energy problems while still maintaining important environmental protections.

In addition, we are encouraged by the conference(s) your staff intends to convene this spring with agencies, licensees and others as indicated on page 20 of your Order, and look forward to participating in such conferences.

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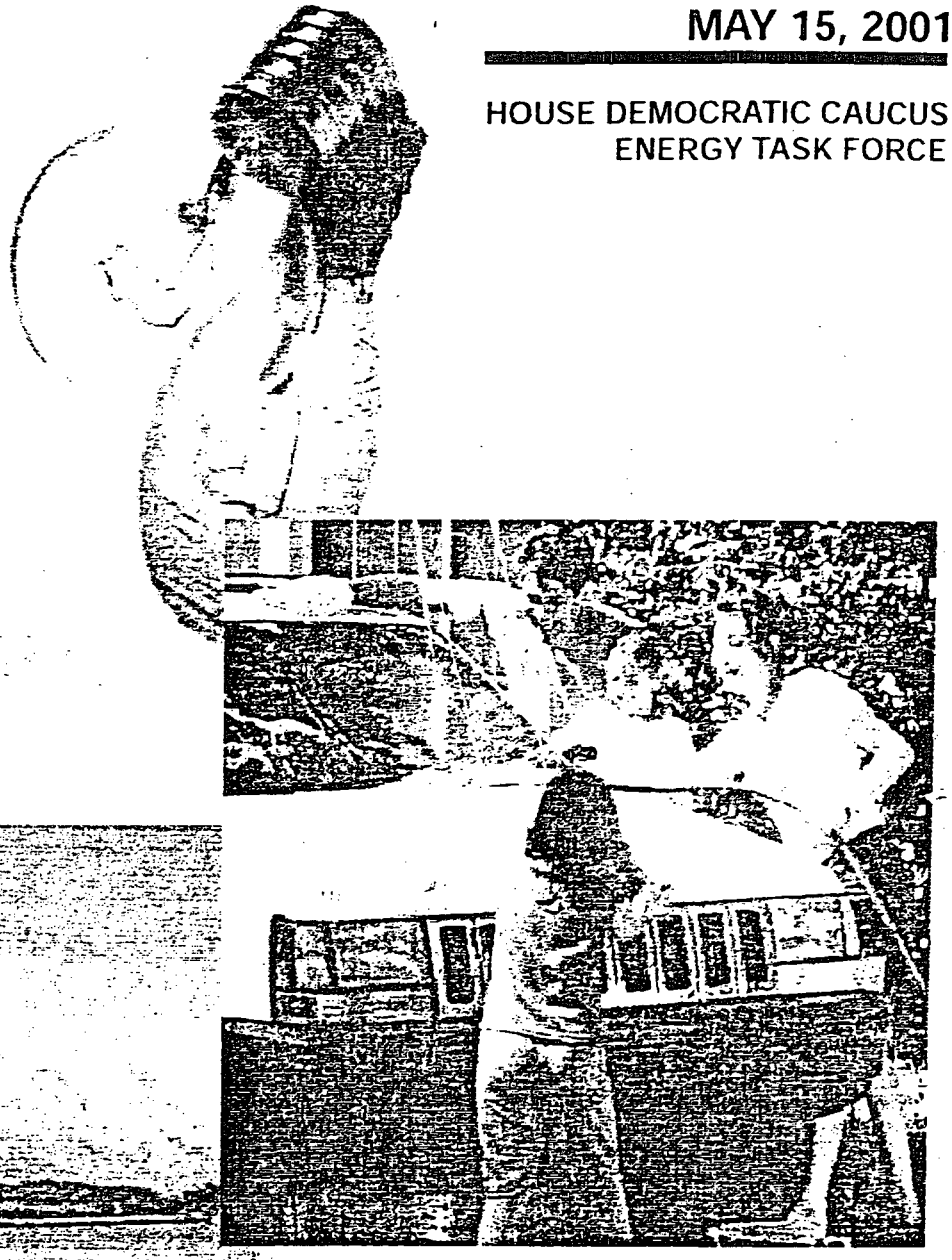
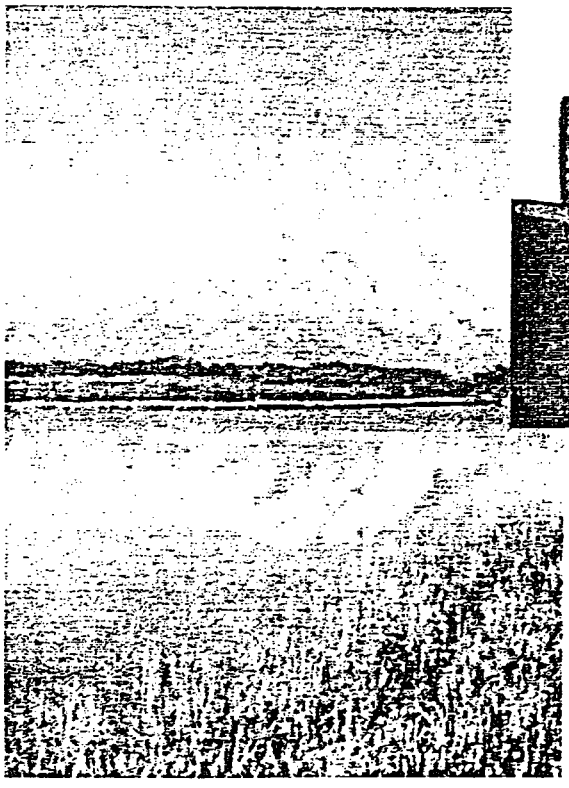
ENERGY

MAY 15, 2001

HOUSE DEMOCRATIC CAUCUS
ENERGY TASK FORCE





PRINCIPLES FOR ENERGY PROSPERITY:

- HELPING CONSUMERS
- PROMOTING GROWTH
- SUPPORTING PRODUCTION
- PROTECTING THE ENVIRONMENT

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PRINCIPLES FOR ENERGY PROSPERITY

Helping Consumers, Promoting Growth & Protecting the Environment

Democrats believe in a balanced national energy policy that helps consumers by both increasing energy production and reducing energy demand. We believe that America's current and future energy needs can be met without compromising our nation's fundamental environmental values. We believe that the federal government can lead by example and become more energy efficient, invest in innovative technologies, and assure that energy markets are fair and competitive.

Democrats reject President Bush's misguided notion that America must sacrifice the environment in order to maximize energy production. We can grow the economy and, at the same time, make strides in improving the environment. Democrats do not believe we need to open our most pristine wilderness areas to oil and gas drilling, when the vast majority of America's oil and gas resources – meeting decades of energy needs – are on less sensitive lands already open to energy development. Accordingly, Democrats oppose President Bush's plan to open the Arctic National Wildlife Refuge for oil and gas exploration.

b(5)

Democrats strongly object to President Bush's assertions that the substantial improvements made in cleaning the air we breathe, cleaning the water we drink, or improving our public health must be sacrificed in order to ensure adequate energy will be available to fuel our industries, heat and cool our homes and businesses, and keep motorists on the road. In fact, we think these assertions are just plain wrong and are designed to scare Americans. Democrats do not advocate energy policies that will require rationing or reductions in our standard of living, rather, we advocate an energy policy that is balanced, fair, and forward-looking. The President and his Administration will in the coming days advocate the construction of more than 1300 new power generating plants, drilling on environmentally-sensitive public lands, and reducing the regulations on energy production which have brought cleaner air and greater efficiency. Democrats support a plan that recognizes the need for new energy production and generation, and will at the same time save consumers money, continue the important work to cut pollutants that affect the health of every American, create real jobs, and will reduce the percentage of imported foreign oil we need to keep our economy strong and to protect our national security.

The plan to be unveiled this week by the Bush Administration follows on the heels of 6 years of energy inaction and intransigence from the Republican-controlled Congress. The Bush Administration is merely following the same tired old Republican playbook: cast blame, insist on extreme anti-environmental proposals, and provide American families struggling to pay their energy bills with no real help now and very little in the future.

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I. HELPING CONSUMERS NOW

President Bush has said that there is nothing he can do to help American families suffering through record high energy bills, gas prices, and electricity blackouts. These claims are a failure of leadership. The American people have earned answers, not excuses.

Democrats believe we can act to alleviate the electricity problems faced by the Western United States. We support ~~multiple steps for helping consumers **NOW** in~~ addition to proposals for providing longer-term help to American families and businesses. Democrats propose effective protections against price gouging, retroactive tax credits for better energy efficiency and assistance to lower income families and the elderly on fixed incomes to help meet and lower their energy costs.

Since the energy crisis of the 1970's, America has saved or produced ***four times*** more energy through efficiency, conservation and renewables than was produced from other new sources. In addition, energy savings cut utility bills for homes and businesses - saving money for American families and making American business more competitive. However, President Bush is now practicing divisive politics by proposing a shortsighted policy that disparages the value of energy efficiency and renewable energy.

An End to Price Gouging

Western Electricity: Democrats believe that the Federal Energy Regulatory Commission (FERC), led by a chairman appointed by President Bush, has failed to enforce the law and stop unjust and unreasonable wholesale prices from being charged in the Western electricity grid. As has been well reported by the press, many communities in the West have faced markedly higher prices for electricity while at the same time they have had to deal with blackouts in their electricity service. Democrats are concerned about the economic implications of this situation for the Western U.S. as well as for entire Nation. Since the FERC and President Bush have repeatedly refused to act, Democrats call on Republicans in Congress to work together with Democrats to promptly pass the Feinstein-Smith bill (S. 764) or the Inslee bill (H.R. 1468) that will return the West to just and reasonable cost-of-service based rates until March 1, 2003. These bills still allow generators to make a profit, and in addition, they exempt new generation to encourage new power plant development and construction. Democrats also believe FERC should order refunds of unjust overcharges that have already occurred. To date, over $6 BILLION in overcharges have been referred to FERC for investigation.

Gasoline Nationwide: Democrats are disturbed about the inaction of President Bush in response to gasoline prices that have now climbed over to $1.70 per gallon for regular unleaded. While Bush Administration officials express their concern, they continue to disregard the Federal Trade Commission's (FTC) March 2001 report that found that during last summer's Midwestern gasoline price spike, certain suppliers withheld or delayed shipping gasoline in order to maximize profits. While not illegal, their actions were clearly against the public's interests. It is the responsibility of the President Bush and his Administration to be vigilant in protecting American consumers. **We call on President Bush to take the following steps:**

Call on OPEC, and non-OPEC oil producers such as Mexico, to increase production at this time when the world spot price for crude oil continues to hover over $28 per barrel. In January 2000, when spot prices were $27 per barrel, then-candidate Bush harshly attacked President Clinton, saying the President "ought to get on the phone with the OPEC cartel and say 'We expect you to open your spigots!'"

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Follow the examples of former Presidents Bush and Clinton, and announce that he is prepared to use his authority over the Strategic Petroleum Reserve to release crude oil in the event of future oil market disruptions. The last two Administrations both successfully released oil from the Reserve to calm energy markets during times of instability. President Bush's pronouncement that he will not use the Reserve to combat manipulation of energy markets amounts to unilateral disarmament in talks with oil producing countries.

Instruct the Justice Department to aggressively investigate energy pricing to assure that illegal price fixing does not occur, and to give thorough anti-trust reviews to any proposals to further consolidate energy companies.

Congress Must Act: The Republican Congress has also ignored the best interest of American consumers by ignoring rising gas prices and refusing to provide real relief for consumers and businesses in the Western U.S. The Republican Congress should fulfill its oversight responsibilities for monitoring energy supplies and the cost of energy. Congress should begin comprehensive hearings on pricing practices throughout the energy industry to find remedies for market manipulation and excessive concentration that can endanger economic growth and public safety.

Energy Efficiency Now!

American are already making lifestyle-changes because of high energy prices, and, as most of the country approaches air conditioning season and as summer vacations

approach, many families will have to curtail the use of appliances or change their vacation plans in order to be able to pay their energy bills. In addition to the immediate help we have called for above, Democrats believe the Congress should take quick action to help families and businesses maximize energy efficiency and conservation without having to make large and painful lifestyle changes. Democrats propose innovative tax incentives for gains in energy conservation and efficiency. We propose a flexible, non-refundable, tax credit for high efficiency vehicles, purchase of energy efficient homes, or defined home improvements that reduce energy costs.

Best Energy Saving Tax Credit (BEST Credit): A flexible consumer tax credit for up to $4,000, provided for:

- *New Homes:* Purchasing a newly constructed or manufactured home that exceeds efficiency standards set under the 2000 International Energy Conservation Code. Up to $4,000 credit for purchase, based on the energy efficiency of the new home.

- *Home Improvements:* Retrofitting existing homes with renewable energy generation, co-generation and/or geothermal heating/cooling. Replacing existing systems with Energy Star appliances, heating/cooling equipment that exceeds federal minimums, high efficiency lighting, windows/doors and/or insulation that meet or exceed federal guidelines. Twenty percent of cost up to $4,000 based on the measures taken by the consumer.

- *Vehicles:* Purchasing cars and/or light trucks/SUV's/minivans equipped with fuel saving new technology or alternative fuel engines. The consumer tax credit will facilitate the introduction of fuel saving technology on those vehicles that consumers are buying to meet their diverse transportation needs. Credit up to $4,000 based on fuel savings or other performance standards.

Structure and Vehicle Efficiency Tax Incentives (SAVE Incentives):
Democrats believe American business should be leading the world in lowering business costs through increased efficiency, conservation and use of renewables.

- *Renewables:* Provides up to a 30% investment tax credit for business investment in renewable energy generation, including wind turbines, co-generation, solar water heating and photovoltaic panels, fuel cells, geothermal technologies and other similar energy efficient technologies.

- *Efficiency:* Allows business to take a deduction for increasing energy efficiency in non-residential buildings, including commercial buildings, state and local government buildings and rental housing The deduction may be taken for up to $2.25 per square foot for property improvements that reduce

energy use by 50% below defined standards.

Vehicles: Provide a 20% investment tax credit for purchase of cars and/or light trucks/SUV's/minivans equipped with fuel-saving new technology or alternative fuel engines.

Supplemental Funding for LIHEAP: Democrats call for action now to help low and fixed income American families meet the rising costs for energy. Democrats call for supplemental funding for the low-income energy heating assistance program (LIHEAP), for the current fiscal year, to respond to record high energy prices.

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Cutting the Federal Government's Energy Bill: Since the start of the Western Electricity crisis, the California state government has cut its daily electric usage by eight to over twenty percent. Democrats believe it is time for the federal government – America's largest energy user with over 500,000 buildings – to become part of the solution and not part of the problem. Democrats propose that all federal facilities in the Western Electric Grid, and in other regions susceptible to electricity shortages, meet a minimum daily reduction in electric power usage of eight percent. Facilities in areas subject to potential blackouts should be prepared to match local government reduction goals during times of power alerts. That means, for example, the federal government should match the twenty percent performance of California in the event of a serious power alert.

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Mass Transit and Van Pooling Benefits: Democrats have long supported the development of an extensive network of public transit systems throughout the nation, in urban, rural, and suburban areas. Democrats continue to support increased funding for these programs so as to provide more low-cost mobility for people who cannot afford to own a car as well as for providing an affordable, high-quality alternative to using automobiles for commuting to work. Because ridership costs for public transit are increasing, Democrats support increases in the transit benefit for both public and private sector employees as well as an increase in the allowable tax deduction for those private sector employers who make the program available to their employees. In addition, Democrats support providing tax incentives for businesses and individuals who provide van pools for commuting workers.

Helping Public Schools Now!

Democrats further believe supplemental funding of $200 million in emergency assistance should be provided in the current fiscal year to help mitigate the impacts of the electricity crisis in the Western Electric Grid. Modeled on the emergency measures adopted by the state government in California, we propose to provide the

funding to cover the costs of the necessary steps to reduce energy use in federal facilities, but also to assist public schools hard pressed by dramatically rising energy costs. This weatherization and energy cost assistance program is vital if public education is not to suffer. Many western school districts are already adjusting budgets – including laying-off teachers – to pay power bills. Democrats believe compromising the quality of education is an unacceptable consequence of the current electricity crisis.

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II. LONG TERM ENERGY SAVINGS

These first steps to promoting better efficiency, more conservation, and greater use of renewables should be followed by continued support for bringing these new technologies to the market place to help consumers save money. Democrats, therefore, propose that the **BEST** Credit and **SAVE** Incentives (discussed on pages 3 and 4) be implemented as quickly as possible to help taxpayers in the current tax year and that they be made available for up to ten years. Over time, Democrats believe our proposals will lead to increased manufacture of new energy efficient equipment and vehicles, and greater investment in construction and renovation that will stimulate economic growth and provide real jobs for American workers. At the same time, these steps save money for businesses and families by reducing energy costs throughout the entire economy

In addition, we call for the enactment of other long-term incentives to help Americans deal with rising energy costs:

Weatherization, Heating Assistance, and Reduced-cost Mortgage Initiative (WHARM):

Democrats favor programs targeted to help lower and middle income Americans meet and lower their energy costs over the long term. We can do this by expanding the successful, bipartisan-supported, LIHEAP program. Currently, only one-third of eligible families receive assistance from LIHEAP for paying the high costs of heating and cooling their homes. We can also assist these families by helping them to take the often rudimentary steps necessary to reduce their energy cost by eliminating energy loss in their homes. Finally, we recognize that purchasing more energy efficient homes, or making energy saving improvements can be beyond the financial resources available to many Americans. ***Democrats believe we need to find creative new ways to help American families finance their steps that will lower their energy costs through greater energy efficiency.***

Weatherization: Democrats would fulfill President Bush's broken campaign promise and actually double the highly successful low income, home weatherization program (exceeding the Bush budget by $450 million over ten years – helping an estimated 150,000 more families than under the Bush budget.)

LIHEAP: Democrats would raise the authorization for the low income energy heating assistance program (LIHEAP) from $2 billion to $3.4 billion, and support appropriations for LIHEAP at the fully authorized level, beginning in FY2002.

Energy Efficient Financing: Democrats support steps to expand the market for "energy efficient mortgages" and to make these financial products more flexible to help more families. Democrats propose that the federally sponsored secondary

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market institutions and any direct federal loan programs be required to offer financing tools that provide increased incentives to improve energy efficiency. Democrats would direct these agencies to develop within twelve months proposals for making energy efficient mortgages more affordable, more flexible home improvement loans, and allow energy savings to be included in calculating loan eligibility.

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III. INCREASING ENERGY PRODUCTION

Democrats are committed to a policy of increased energy production and the environmentally sound use of all energy sources. Moreover, Democrats favor continuing the production of energy on public lands in accordance with the established procedures followed so successfully by the Clinton Administration. President Clinton produced more energy from our public lands that the previous Bush or Reagan Administrations, demonstrating that energy production can be enhanced while at the same time respecting environmental protections, and without sacrificing natural wonders set aside for their unique contribution to our environmental heritage. According to the Department of the Interior, 89% of the United States' proven oil and gas reserves are in areas open to drilling. Democrats support policies to encourage further production of energy from these regions.

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Democrats encourage the construction of and continued maintenance of energy production and delivery systems in the United States. We recognize that refinery bottlenecks, pipeline disruptions and outdated transmission facilities have had a significant negative impact on safe, efficient development and delivery of energy. Democrats support tax incentives to encourage the development of critical energy infrastructure, review of federal regulations to find ways to maximize use of this infrastructure, and strengthen laws to insure safety and reliability.

Domestic Energy Enhancement Program (DEEP)

Democrats recognize that traditional energy sources, such as natural gas, crude oil, nuclear and coal will continue to meet the majority of America's energy needs for much of the foreseeable future. Democrats believe in enhancing our energy production and in finding ways to encourage making greater advances in lessening the impact on our environment.

Petroleum Production: Currently, oil and natural gas account for approximately 65 percent of the nation's energy supply and will continue to be the significant energy source in our country. Democrats believe we need to provide greater market stability for both the oil and gas industry to help maintain and increase domestic production, and to deter wild price swings that hurt American families. Democrats support targeted tax incentives for domestic production of crude oil. These

incentives are directed at making marginal wells more profitable to keep them in production as well as to reduce the costs of domestic exploration for new sources of oil and gas. These tax credits include, but are not limited to:

- Tax credits for producing oil and gas from marginal wells.

- The election to expense geological and geophysical expenditures and delay rental payments.

- 5-year net operating loss carryback for losses attributable to operating mineral interests of independent oil and gas producers.

- Temporary suspension of limitation based on 65 percent of taxable income and extension of suspension of taxable income limit with respect to marginal production.

Petroleum Market Stability: Wild price swings are harmful to both domestic producers and consumers and can constitute a threat to our economic stability and national security.

- *Petroleum reserve:* One tool available to minimize the economic damage caused by oil market disruptions is the release of oil from the Strategic Petroleum Reserve. And, in order to protect the domestic industry in times of falling prices which may force the shut-down of domestic wells, the Federal government should purchase oil to place in the reserve. President Bush has announced that he is not willing to release oil from the SPR as a means to stabilize prices during market disruptions. Democrats would require the President to report to Congress on why oil will not be released when market prices exceed $30/barrel, and report why domestic oil will not be purchased from marginal wells for the SPR when prices are below $15/barrel.

- *Heating oil reserve:* Democrats pushed for the creation of the Northeast Home Heating Oil Reserve and call on President Bush to continue funding for the Northeast Home Heating Oil Reserve. Additionally, Democrats support legislation that would require the President to report to Congress why home heating oil will not be released when market prices exceed the triggers in current law, and report why stocks to fill the reserve will not be purchased when prices are low.

- *Enhance retail competition:* Democrats also recognize that increased concentration in the oil and gas industry has led to price discrimination against independent gasoline marketers who often do not get the lowest price from allied wholesalers and refiners. Democrats propose that a price-reporting requirement be imposed on the wholesale and refining industries in order to

allow independent marketers an equal opportunity to obtain the lowest price for vehicle fuels. This will allow these retailers to offer lower prices to consumers.

Natural Gas: Democrats recognize that, according to the National Petroleum Council, 91% of the United State's proven reserve of onshore natural gas (1,466 trillion cubic feet), is open to drilling. Seventy-nine percent of offshore natural gas (286 trillion cubic feet) is currently open to drilling. Together these reserves would meet current needs for 40 years. In order to encourage natural gas production, Democrats propose the same tax incentives for marginal wells and domestic exploration as proposed above for crude oil.

In addition, Democrats support a production tax credit to promote the development of a new Trans-Alaskan natural gas pipeline to bring natural gas on Alaska's North Slope to the continental United States, consistent with current environmental regulations and current law which authorizes the construction of the pipeline.

Democrats also support the creation of a natural gas reserve to protect American consumers from dangerously high natural gas prices which affect the electricity market, and to be used to buy domestic natural gas from marginal wells during times of low prices.

Pipelines: In addition to the development of a new Alaskan natural gas pipeline, Democrats propose strengthening our current oversight program for pipelines in order to enhance safety and reliability. In 2000, seventeen Americans lost their lives in pipeline accidents. In addition, pipeline disruptions caused significant supply and price problems.

Democrats would further require the Federal Energy Regulatory Commission to review its permitting process to speed approval of pipeline siting and construction. Under the Clinton Administration, FERC greatly reduced the time required for permitting new pipelines. However, more needs to be done to further expedite the siting of pipelines but without compromising safety or environmental standards. In addition, the Department of Transportation's Office of Pipeline Safety must stringently enforce pipeline safety laws in in order to protect human health and safety as well as environmental standards.

Coal: Coal is currently the source for over 50% of America's electricity generation. Democrats believe we need to encourage innovation in research and provide incentives for reducing pollution from our existing coal-fired power plants.

"EXCEED" Tax Credit: Democrats propose a ten percent investment tax credit for the cost of clean air control technology for utilities that lead a power plant to exceed mandatory emissions reduction levels for pollutants regulated

under Title I of the Clean Air Act, or for significant early compliance with clean air emissions reduction target dates. This credit would also be extended to measures that reduce CO2 emissions. This credit could be applied on a sliding scale to encourage greater or faster emissions reductions. Public utilities and coops would be permitted to trade the credits or use them as offsets against debt or obligations in lieu of tax credits.

- *Hybrid plants:* Democrats propose up to a ten percent investment tax credit for modifications to existing coal plants to allow the use of biomass and/or synthetic liquid and gaseous fuels from coal, in combination with coal to produce at least five, and up to fifteen percent of a plants' fuel requirements from such sources. The use of such technologies as biomass would significantly improve environmental performance, while also offering farmers a new market for agricultural surpluses. Public utilities and coops would be permitted to trade the credits or use them as offsets against debt or obligations in lieu of tax credits.
- *New research:* Over the last 30 years, emissions from coal-fired plants have been reduced by 20 percent, while power generation has tripled. Continuing this progress is important to our economy, to improving the environment, and to reducing our dependence on foreign sources of fossil fuels. Democrats support funding for research on technologies that can further reduce emissions from the use of coal.

Nuclear: Democrats recognize that nuclear energy currently provides approximately 20 percent of the nation's electricity. We support continued research in advanced technologies for nuclear power as well as continued efforts to find safe and environmentally sound methods to reduce nuclear waste and provide for its safe disposal.

Electricity transmission: Increased wholesale electricity sales have placed strains on our existing electricity transmission infrastructure. Democrats would direct the National Academy of Science to study our existing nationwide grid to identify infrastructure bottlenecks so that the federal government can then target incentives to the highest priority modernization projects.

Refining capacity: While refining capacity expanded in the past eight years to higher levels than were achieved under either former Presidents Bush or Reagan, recent refinery expansions have not resolved the many problems with refinery bottlenecks. Democrats propose measures to address the energy-processing problem:

- *Biomass-fuels:* Last summer's Midwest gas price spike was caused in part by refinery delays in preparing reformulated and regular fuels. Democrats propose investment tax credits for cooperatives that construct biomass-fuel

(such as bio-diesel and ethanol) refining capacity. This tax incentive will help to increase the supply of these fuels to keep pace with rapidly rising demand. It will also help farmers who have been hard pressed during the past three years by record low crop prices.

Expedited review: Democrats would instruct EPA to continue the Clinton Administration practice of expediting the agency's review of refinery permits within 180 days. We support efforts that speed up federal environmental reviews when to do so does not detrimentally impact environmental standards. Under the last Administration, for example, the EPA's review process enforced environmental laws, and led to over two dozen refineries expanding their capacity – allowing American industry to achieve high levels of refining capacity.

Renewable Energy Advancement Program (REAP): Renewable energy remains at a competitive disadvantage in the current marketplace, where long-term energy security and environmental gains are minimal factors. Democrats propose a comprehensive tax and assistance program for leveling the playing field for energy produced from renewable resources so renewable energy use can grow as a percentage of the energy market for America's long-term benefit.

Tax Incentives: Democrats support increasing the existing investment credit for renewable energy infrastructure to 20% for solar and geothermal, and extending the credit to wind and biomass and any energy produced from renewable resources. Democrats also call for increasing the current tax credit for producing electricity to 2 cents per kilowatt hour for electricity produced from wind and biomass, and extend the credit to solar and geothermal.

CARE Bank: Democrats propose to create a **"Clean, Alternative and Renewable Energies" Public Benefits Bank** to provide flexible financing for rapid development of America's renewable energy generation. The CARE Bank would serve as an infrastructure bank for state and local governments, schools and universities, and non-profits and cooperatives. Funded at $1 billion per year for the next ten years, the CARE Bank would finance such projects as placing solar panels on school rooftops, the cost of net metering equipment, and the necessary infrastructure for maintaining fleets of alternative fuel vehicles. This flexible fund will help to provide the resources for local communities to better manage their energy costs and increase local energy generation.

IV. PROTECTING THE ENVIRONMENT

President Bush is dividing and not uniting Americans when he pits the Nation's energy needs against our most important environmental protections. The American public has consistently supported protection for our wildlife refuges and wilderness areas. ***Democrats believe the United States can increase energy production while also protecting the environment.*** The first steps to achieving this goal are the effective efficiency, conservation and renewable energy programs previously described. We must also continue to be wise stewards of our federal lands, advocates for cutting air pollution – including CO2 emissions that are the leading cause of global climate change – and oppose efforts to take short-sighted short-cuts through our environmental laws. In that light, Democrats are troubled by President Bush's turnaround on this important issue and call on him to fulfill his campaign promises to implement the CO2 emission regulations first proposed by President Clinton.

Protecting our lands: Democrats have long supported environmental protections for our rare wilderness areas. We believe that President Bush has failed to justify a change in the policy of successfully balancing energy production and environmental protections. In the last eight years, energy production on federal lands reached record highs, yet at the same time, millions of acres of America's most beautiful, rare and pristine lands were set aside for the enjoyment of all Americans and future generations.

Clean Air Incentives (EXCEED Tax Credit): Provide an investment tax credit of up to 20% for the cost of clean air control technology for businesses that **exceed** mandatory emissions reduction levels for pollutants regulated under Title I of the Clean Air Act. In addition, Democrats believe the **EXCEED** credit should be provided to **utilities that cap their CO2 emissions at 2000 levels**. The utility would earn a larger credit based on the increased level of emission reductions, with the largest credit for CO2 given for reducing emissions to 1990 levels. The credit could be traded by publicly owned utilities and energy cooperatives to encourage their participation in greater emissions reductions.

Expedited Environmental Review: Democrats disagree with Republican claims that environmental standards must be waived and weakened in order to speed economic development. Democrats oppose weakening America's environmental laws. We support efforts to quicken federal environmental reviews when to do so does not detrimentally impact environmental standards, such EPA's 180-day review of refinery permits previously noted. Democrats would require federal agencies to review their environmental review procedures in order to find time savings, that do not compromise environmental protections, for energy generation, processing, transportation and transmission projects that require federal approval.

Moving forward on the environment: Democrats are disappointed that President Bush has used his first 100 days to establish a record of rolling back environmental standards and the Nation's commitment to continued progress in fighting pollution. We call on the President to reverse course and work with Democrats on these key issues:

- *Vehicle fuel efficiency:* Democrats believe that the Secretary of Transportation should prescribe by regulation the maximum feasible fuel economy level for light trucks, SUVs, and mini-vans that he decides the manufacturers can achieve in a model year, in accordance with requirements and conditions of existing law.

- *Appliance efficiency standards:* Democrats believe the Bush Administration should not weaken the appliance efficiency standards proposed by the Clinton Administration, including those for air conditioners.

- *Global climate change:* Democrats believe the United States should continue to be an active participant in international talks on global climate change. President Bush should fulfill his campaign promises to seriously address climate change, and he should recognize that scientific fact shows global climate change is occurring and is a serious risk to the health of our planet. President Bush has significantly damaged the diplomatic credibility of the United States by his actions on global climate change, and he has acted in disregard of the views and best interests of the vast majority of Americans. Democrats also call for immediate action, as describe in Section V, to reduce federal government energy use, saving taxpayers money, and voluntarily achieving greenhouse gas reductions over in a manner consistent with current American law.

V. LEADING ON ENERGY

The federal government is the largest single consumer of energy in the United States. For example, the government manages the energy demands of 500,000 buildings. The federal government must become an energy leader by taking aggressive action to cut its energy use. The federal government can also lead the private sector by example by investing in research on long-term solutions to meet our national energy requirements.

Cutting Federal Energy Use: Democrats propose that the federal government establish an energy use budget, and set goals for reducing federal energy costs over the next ten years. Democrats call for increased funding for up-front investment in converting energy sources for federal buildings, such as installation of solar panels on roof-tops, and improving the energy performance of buildings and equipment. In addition, Democrats propose to reward energy saving agencies by allowing them retain half of the money saved from reduced energy bills for use in agency programs that serve the public.

- ***Government contracting:*** We believe that the federal government's current contracting rules do not take into full consideration the energy costs incurred by the government. Democrats propose that the rules for awarding construction contracts and standards for equipment purchases be changed to require consideration of long term energy operating costs. The government should not, for example, be buying the least expensive air conditioning equipment if it costs more taxpayer's money when operating costs are factored into the bid. Government buildings should also be constructed in a way that produces the lowest costs to taxpayers throughout the life-expectancy of the structure.

- ***Vehicle purchasing:*** The federal government is one of the largest single purchasers of vehicles in this country. As automakers prepare to introduce a new generation of hybrid vehicles into the marketplace, Democrats believe the government should be leading the way in making this new technology a success. We propose that the federal government be required to purchase hybrid vehicles, when such vehicles are available and can meet all performance needs for the purchasing agency. This presumption in federal purchasing would be a powerful stimulus to lowering the costs and increasing the available of these vehicles to the public at large.

- ***Appliance Efficiency Standards:*** Democrats believe that the Bush Administration should immediately reinstate the 30% efficiency improvement standards for central air conditioners that it rolled back earlier this year. The Bush Administration should also accelerate rulemakings to adopt, within two

years, updated efficiency standards for commercial air conditioners and residential heating systems. In addition, Democrats also believe that the Department of Energy should propose strong new standards for other devices, such as limits on standby power consumption of televisions, VCRs, and other electronic products, and establish efficiency standards for exit signs, traffic lights, torchiere lighting fixtures; and utility transformers.

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VI. INVESTING IN THE FUTURE:

The United States has long been the world leader in developing new energy technologies, yet, the Bush energy budget guts critical programs that encourage cutting edge research on renewable energy and energy efficiency. ***Democrats strongly believe that the U.S. must continue its investment in new techonology in order to maintain our technological lead in energy efficiency and that the Congress should direct the National Academy of Sciences to investigate cost-effective ways in which America can be come more energy efficient through the use of new technologies.*** We also believe we need to invest in finding ways to increase energy production and to use fossil fuels and other currently utilized energy technologies in the most environmentally responsible manner possible

Democrats are particularly concerned the Bush budget has dramatically cut programs which will help us achieve these goals. In the first budget submission, the Bush Administration has proposed reductions in overall spending for the Department of Energy by $460 million. For example, if funding for he Bush clean coal power initiative is removed from the ***fossil energy research and development programs budget, the remaining fossil energy programs are cut by an average of 45 percent. Renewable energy is cut by 34.6 percent and conservation (other than weatherization grants) by 21.2 percent. Geothermal and hydrogen research are cut by 48.3 percent; hydropower by 49.9 percent; solar energy by 53.7 percent; and, wind energy by 48.2 percent.*** This is on top of a three-fourths reduction in energy funding (in constant dollars) between 1980 and 2000. This long-term decline in energy research and development spending, along with the short-sighted cuts in renewable energy programs proposed by the Bush Administration will be costly to the country in the long-run. ***Democrats call on the Administration and the Republican Congress to restore these cuts as well as to increase funding for those programs which have the greatest potential to reduce the need for the import of fossil fuels.***

Renewable and Alternative Energy: Democrats believe there are a number of promising technologies whose development could result in cost-effective alternatives to traditional energy sources. The Energy Information Administration has said an aggressive research and development and technology deployment program can make significant reductions in energy requirements over the next 20 years. Within such a comprehensive plan of energy research and development, we call on the Department of Energy to publish an annual inventory and assessment of renewable energy resources and to promote their development. Some of these programs include:

- wind, photovoltaic, solar, biomass, geothermal, and biofuels;
- distributed generation and cogeneration;
- fuel cell technology; and
- net metering and national interconnection standards.

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Science Education: A critical factor in the development of new technologies is education. Democrats believe every effort should be made to encourage colleges and universities to participate in programs that will attract students who will be the research scientists, geologists, and engineers of tomorrow. We support a scholarship program for science and engineering students whose academic career is focused on energy research and development, as well as grants to those universities who establish programs directly-related to research and development in renewable and alternative energy techonologies.

Elevate Science and Technology in the Department of Energy: Democrats believe science and technology are issues deserving the full-time attention of DOE and call for increased funding for the Office of Science as well as the creation of the position of Under Secretary for Science and Technology to oversee all R&D programs.

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NUCLEAR ENERGY INSTITUTE

The Nuclear Energy Electricity Supply Assurance Act of 2001

Senator Pete Domenici (R-N.M.) and 10 co-sponsors on March 7 introduced The Nuclear Energy Electricity Supply Assurance Act of 2001, a bipartisan bill to ensure that nuclear energy remains a major contributor to U.S. electricity production.

Nuclear energy generates more than 20 percent of U.S. electricity at the lowest production cost of any expandable large-scale energy source. Nuclear energy also is the largest emission-free source of electricity in the country.

The Domenici bill, S. 472, includes provisions to get more energy out of the nation's 103 nuclear plants, while laying the groundwork and encouraging planning for the construction of new advanced-design nuclear plants.

The wide-ranging bill encourages increased production from nuclear power plants, expands research and development on new reactor technologies, ensures a viable domestic nuclear fuel industry and educational support system, labels nuclear energy an "environmentally preferable" electricity technology, expands R&D on innovative used nuclear fuel management solutions, and reforms outdated Nuclear Regulatory Commission (NRC) rules and procedures.

The bipartisan co-sponsors of S. 472 are: Sens. Larry Craig (R-Idaho), Mike Crapo (R-Idaho), Bob Graham (D-Fla.), Chuck Hagel (R-Neb.), James Inhofe (R-Okla.), Jon Kyl (R-Ariz.), Mary Landrieu (D-La.), Blanche Lincoln (D-Ark.), Frank Murkowski (R-Alaska) and Fred Thompson (R-Tenn.).

Background

Domenici's legislative strategy is to expand and build upon a separate comprehensive energy bill—The National Energy Security Act of 2001—introduced two weeks earlier by Murkowski. Both bills, which contain some common provisions, address the need for more electricity production, which has become a critical concern in several U.S. regions.

- In California, shortages of generating capacity and rising natural gas prices have contributed to skyrocketing consumer electricity rates, the near-bankruptcy of two major utility companies, and blackouts affecting millions of people and thousands of businesses—all at a cost of billions of dollars. Generating capacity shortages are also forecast for other regions over the next few years.

- Rising energy prices topped the list of economic concerns voice by Americans in a February *Wall Street Journal*/NBC survey.[1] Eighty-six percent of Americans agree that the country faces an energy problem, and they ranked energy prices as a more pressing concern than federal taxes and the budget. One-third said the United States faces an energy crisis and more than one-half see rising energy costs as a problem rather than a crisis.

[1] *Wall Street Journal*, March 8, 2001

(b)(5)

- By 2020, the Department of Energy (DOE) forecasts that the United States will need 393,000 megawatts to 564,000 megawatts of new electric generating capacity, assuming a modest growth rate in electricity demand of 1.8 percent to 2.5 percent per year.

Domenici said nuclear energy must continue to play a major role in the nation's energy portfolio to ensure a reliable U.S. electric system. Nuclear energy offers a near-term opportunity to help expand the nation's supply of low-cost generation, Domenici said, and it also represents the nation's largest producer of emission-free electricity. The energy problems in California serve as a warning of the risks of depending too heavily over the long term on a single fuel for electricity generation, the bill's supporters said.

To ensure that nuclear energy remains a viable and reliable electricity option, the legislation contains the following provisions:

Price-Anderson Act Extension

- Extends the Price-Anderson no-fault insurance law, which incurs no cost to the federal government or consumers, for an additional 10 years until Aug. 1, 2012.

DOE Programs

- Creates two new DOE assistant secretaries to head the Office of Nuclear Energy, Science and Technology and the Office of Science. A director currently heads both offices at DOE.

- Authorizes an increase in funding for DOE's Nuclear Energy Research Initiative (NERI) to $60 million in FY2002. The NERI program is a mid- to long-term R&D effort that addresses potential barriers to expanded use of nuclear energy.

- Authorizes an increase in funding for DOE's Nuclear Energy Plant Optimization (NEPO) program to $15 million in FY2002. DOE and private industry share the cost of NEPO research, which focuses on boosting the reliability and productivity of nuclear plants and supporting efforts to achieve license renewal through management of the long-term effects of plant aging.

- Authorizes DOE to pay 10 percent of the cost of any capital improvements that result in a permanent increase of at least 5 percent in the rated capacity of a nuclear plant. Payments are limited to $1 million per plant. DOE may also reimburse owners for NRC licensing fees. To qualify, the plant must achieve the increase in generating capacity before Dec. 31, 2004. The bill authorizes $15 million for the program in each of FY2002 and FY2003.

- Authorizes DOE grants to support university nuclear engineering and related education programs. $34.2 million in FY2002 would be used to upgrade research reactors, to support R&D, and for fellowships and scholarships.

- Prohibits DOE from selling surplus uranium and or conversion services through 2006.

- Authorizes DOE to begin a cooperative R&D program, funded at $10 million annually, to test advanced uranium mining technologies, and provides limited additional funding for other programs to maintain a viable domestic uranium mining and conversion industry.

- Authorizes DOE to place the Portsmouth, Ohio, gaseous diffusion uranium enrichment plant in cold standby condition for 5 years.

New Nuclear Plant Construction

- Authorizes DOE to study the potential for completing unfinished nuclear plants that can be on line by 2005. DOE would then recommend to Congress actions for completing these facilities.
- Authorizes DOE to undertake jointly funded, government/industry demonstrations of the NRC's "early site permit" process, which allows pre-approval of sites for new nuclear plants before applications to the NRC for building the plants are submitted. DOE would build a "bank" of at least three approved sites by Dec. 31, 2003. The bill authorizes $15 million both in FY2002 and FY2003.
- Authorizes a DOE study of advanced ("Generation IV") nuclear power plants that are cost competitive, use enhanced safety systems, and are highly proliferation-resistant. DOE would select at least one Generation IV reactor for conceptual design by Sept. 30, 2004, and develop plans for one or more public/private cooperative demonstrations. The bill authorizes $50 million in FY2002 for the program.
- Authorizes the NRC to spend $25 million in FY2002 for research to support resolution of potential licensing issues for new reactor designs.

Environmentally Preferable Power

- Denotes nuclear energy as an "environmentally preferable" product and prohibits the federal government from discriminating against it in purchasing decisions.
- Clarifies that the expanded use of emission-free power sources, such as nuclear plants, is eligible for economic incentives available under State Implementation Plans (SIP) required by the Clean Air Act. Today, only pollution control measures are eligible for these programs.
- Prohibits the use of federal funds to support domestic or international organizations that finance, develop, insure, or underwrite electricity production facilities—such as the Agency for International Development, World Bank, Overseas Private Investment Corporation, International Monetary Fund and Export-Import Bank—if they exclude consideration of nuclear energy.

Used Nuclear Fuel Management

- Establishes an Office of Spent Nuclear Fuel Research at DOE to develop a national used nuclear fuel strategy and conduct research.
- Directs DOE to study electrometallurgical technology as a proliferation-resistant alternative to used fuel reprocessing. The bill authorizes $10 million in FY2002 for the program, which would apply to Generation IV nuclear reactors.
- Directs DOE to launch an Advanced Accelerator Applications program to demonstrate the use of accelerators for transmutation of high-level radioactive waste. By June 30, 2003, DOE must recommend a site for construction of the facility.

NRC Programs and Regulatory Reform

- Eliminates outdated NRC regulations that restrict foreign ownership of U.S. nuclear power plants and require the agency to conduct duplicative anti-trust reviews in connection with licensing actions.
- Simplifies hearing requirements in NRC proceedings involving amendments to, or transfer of, an operating license. The bill allows NRC to use informal rulemaking procedures, not formal adjudicatory hearings.
- Authorizes NRC to establish requirements to ensure that former nuclear plant licensees comply fully with obligations to fund nuclear plant decommissioning.
- Allows NRC to recover user fees from other government agencies.
- Makes it a federal crime to sabotage a used nuclear fuel storage facility and authorizes guards at NRC-licensed facilities to carry firearms.

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C E R A

Decision Brief

NORTH AMERICAN
ELECTRIC POWER

APRIL 1999

GRIDLOCK—TRANSMISSION INVESTMENT AND ELECTRIC RESTRUCTURING

by Steven Taub and Mark Smith

Who will invest in the electric power transmission network? Currently there is no entity in the emerging industry structure—neither generators, transmission owners, independent system operators, distribution companies, traders, retail marketers nor end users—facing the proper incentives to invest.

This investment paralysis, or "gridlock," is rooted in the partial unbundling of the power industry into horizontal segments, creating a muddled mixture of competition and cooperation that has not aligned the desire to invest in transmission with the ability to recover that investment. Complicating this lack of incentives is the fact that the costs and benefits of transmission investments that were internalized by vertically integrated utilities in the future will fall on different parties, politicizing investment decisions. Existing regulatory institutions and the emerging independent system operators are not well equipped to resolve these issues.

Gridlock creates an investment bias in favor of generation projects, even if the overall cost-benefit analysis would favor a transmission project. Without investment, transmission congestion will become increasingly frequent, balkanizing the electric power markets. This will lead to chronically inefficient wholesale power markets with volatile prices, low liquidity, and persistent problems with local market power. Sustained underinvestment in transmission may eventually threaten the reliability of the bulk power system.

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The key to breaking out of gridlock is incentives, but they will require delicate balancing or they will have unintended consequences.

Pressure for further structural change is mounting: several utilities are developing for-profit transmission companies. The Federal Energy Regulatory Commission's (FERC's) upcoming proposal for restructuring the transmission sector will catalyze the debate over the future management of the grid.

Optimizing Electric Transmission Networks as a Whole

The complexities of the electric transmission system network result from the inability to control directly the flow of power on the system. This fundamental physical reality requires that the grid be viewed as an integrated whole, making it difficult to manage and optimize. As Figure 1 shows, a seemingly simple power market transaction to move 1,000 megawatts (MW) from Ontario to neighboring New York can affect power flow hundreds of miles away from either party.

Please mark your calendars for CERA's Spring 1999 North American Electric Power Executive Roundtables:

New York (Global Energy Overview)	May 7
Calgary	May 12
San Francisco	May 14
Houston	May 20
Charlotte, NC	June 8
Boston	June 21

To register please contact CERA Registration by telephone: (617) 497-6446, extension 800; fax: (617) 498-9176; or e-mail: register@cera.com.

Cambridge Energy Research Associates

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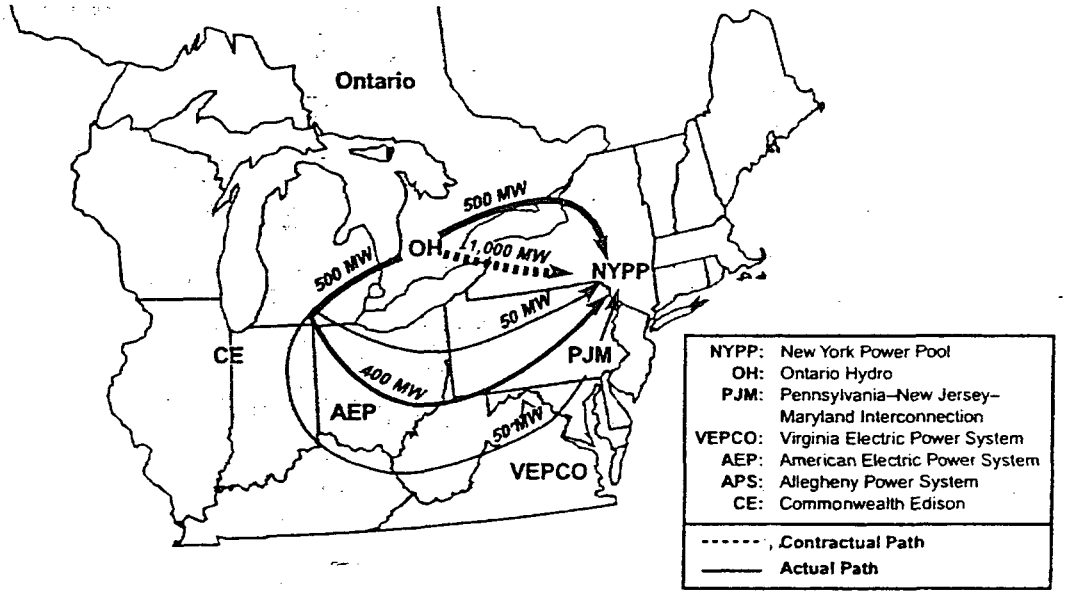
Figure 1

Parallel Path Flow:
Actual Flow of 1,000 MW Transfer from Ontario to New York



Source: Cambridge Energy Research Associates.
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Efficient investment decisions require an analysis of the transmission network as a whole to internalize loop flows like those shown in Figure 1. They must also consider all of the potential options and their costs and benefits (see Figure 2). One major benefit of transmission investment is a reduction in the level and duration of differentials in wholesale power prices at different locations. Wholesale price differentials have been a persistent feature of the wholesale power markets because transmission system bottlenecks prevent arbitrage. Another potentially substantial benefit of transmission investment is lower ancillary service prices due to decreased demand.

For many decades transmission investment has been primarily driven by the need to interconnect new power plants to the grid. Figure 3 illustrates the historically close relationship between investments in transmission and the installation of generating capacity by utilities and nonutility generators. Interconnections between neighboring utilities to enhance reliability and allow sharing of generating capacity were also common after the cascading blackout of the northeastern United States in 1965.

Future decisions to invest in the transmission system will depend on a balancing of costs and benefits, often independently of generating plant construction. In theory there exists an optimal level of investment to achieve an economically efficient level of transmission congestion, balancing the price differentials and ancillary service costs against the cost of investments in the transmission system (see Figure 4).

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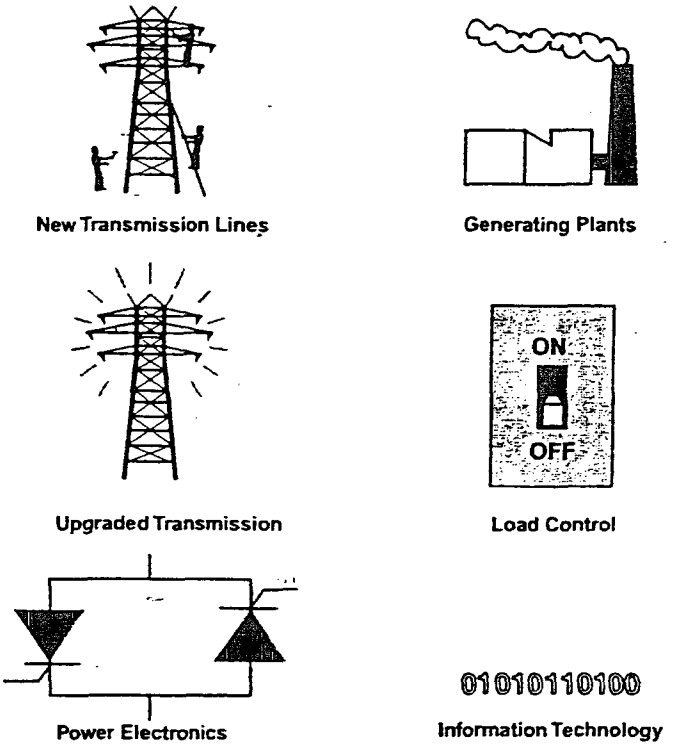
Figure 2

Six Ways to Relieve Transmission Bottlenecks



Source: Cambridge Energy Research Associates.
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Gridlock exists because nobody is in a position to analyze the system as a whole, develop the optimal investment plan, raise the necessary capital, and find a way to capture the benefits to recover the investment and earn an adequate return.

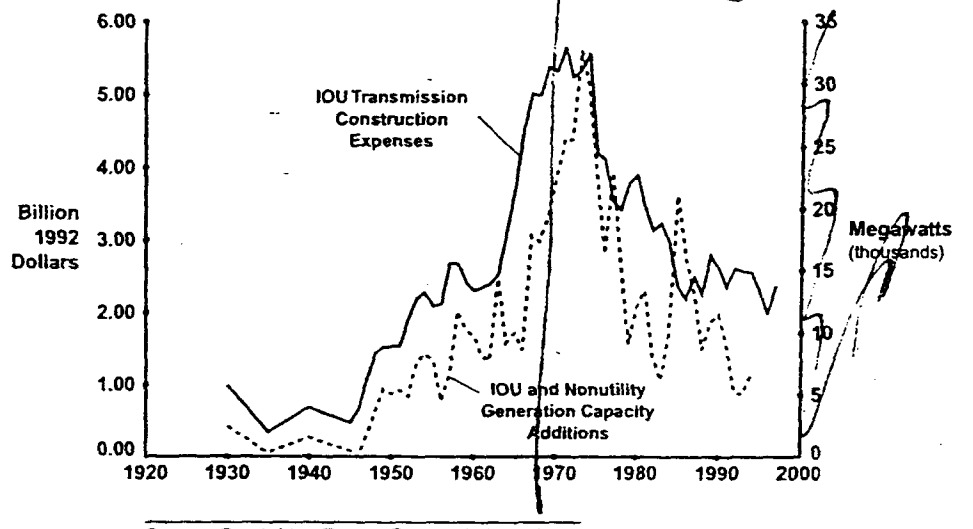
Investment Signals and Responses

Wholesale electricity prices are a key signal to investors. High energy and capacity prices are a signal that investment is needed in generation, and high price differentials and ancillary service prices are signals that investment is needed in transmission.

The high prices and differentials in the Midwest during the summer of 1998 sent a clear signal that there is a need for investment either in generating plants to alleviate regional power shortages or in transmission facilities to allow power to flow into the regions where it is needed. Generators are responding to these price signals: 1,400 MW of new capacity is now under construction in the East Central Area Reliability Coordination Agreement (ECAR) and Mid-America Interconnected Network (MAIN) regions, the epicenter of the price spikes. Unregulated generation companies and vertically integrated utilities are developing another 6,500 MW slated to come online in those regions by 2001. Some of these investments

Figure 3

US Transmission Investment and Generating Capacity Additions



Source: Cambridge Energy Research Associates.

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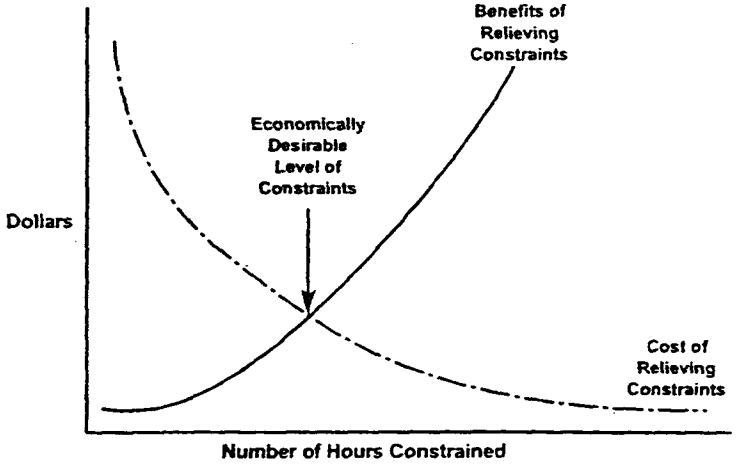
Figure 4

Some Level of Transmission Constraints Is Economically Efficient



Source: Cambridge Energy Research Associates.

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are being made to ensure reliability, but many have been undertaken to capture the financial opportunity of booming market prices.

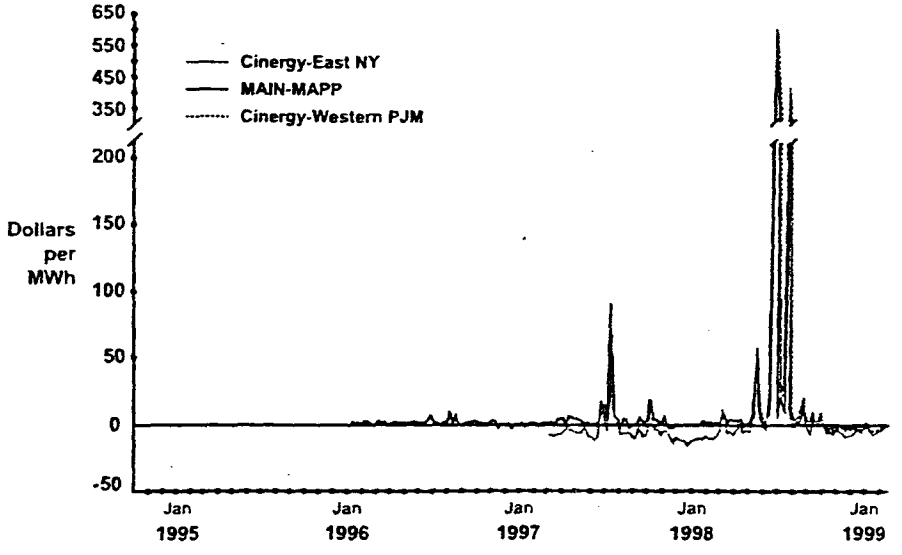
Price differentials between the Midwest and the adjacent Mid-Continent Area Power Pool (MAPP) and Pennsylvania–New Jersey–Maryland (PJM) markets spiked to unprecedented levels during June and July 1998 (see Figure 5). This situation is not unique to the Midwest; price differentials rose across North America, and market-based ancillary service prices in California were high enough to lead the Federal Energy Regulatory Commission (FERC) to impose a cap of $250 per megawatt per hour. Gridlock has almost completely blocked a response by transmission projects to these price signals.* Despite over 120,000 MW of new generation being developed nationwide, investor-owned utility (IOU) transmission investment plans, as shown in Table 1, are flat.

Gridlock—Why Are We Stuck?

Complexity, cost, and public opposition are significant challenges to transmission investment, but utilities have overcome these obstacles hundreds of times in the past. What has changed? One simple fact has caused the current affliction: nobody is motivated to invest. There are a number of regulatory, financial, and structural reasons for this predicament:

Figure 5

Midwest Spot Power Differentials



Source: Cambridge Energy Research Associates.

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*The only proposal is to strengthen the interconnections between the eastern Wisconsin utilities and their neighbors to the south and west.

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Table 1

Transmission Investment by Investor-owned Utilities
(billion 1992 dollars)

1995	2.30
1996	1.97
1997 preliminary	2.37
1998 forecast	2.60
1999 forecast	2.63
2000 forecast	2.57

Source: Edison Electric Institute.

Regulatory Obstacles

- **Network boundaries and regulatory jurisdictions are not aligned.** States and sometimes even local governments retain an important role in siting and permitting transmission facilities despite the federal preemption for interstate commerce. State regulators must also approve transmission investments that are to be collected through cost-of-service rates. This tangle of overlapping jurisdictions makes regulatory approvals a complex process fraught with opportunities to delay or scuttle investment plans.

- **Regulations are in flux.** The FERC has advocated regional transmission organizations and is in the process of developing a Notice of Proposed Rulemaking (NOPR) for an Order that would compel transmission owners to join them. Until the FERC acts or abandons this effort, transmission owners, unsure of the disposition of their current assets, seem unwilling investors for fear of creating additional stranded investment.

Financial Hurdles

- **Revenues are uncertain.** Revenue streams to recover transmission investments are not clearly defined under the new ISO structures and transmission pricing schemes. For example, PJM and New York propose to award transmission congestion contracts* to transmission investors, but the number of contracts to be awarded will only be determined when the project is complete, and the value of the contracts is difficult to predict.

- **Raising capital is difficult.** Utilities may prefer to commit capital to more profitable, unregulated investments. Even those seeking low-risk returns on regulated investments will be reluctant to invest where they have no control of operations or pricing and are exposed to additional liability for future capital investments at the ISO's discretion. The ISOs themselves lack the financial strength to raise capital on their own. Investors will naturally be wary if it is not clear where the revenue will come from to repay debt and generate returns on equity.

- **Assignment of costs and benefits is problematic.** Utility and ISO operating rules and generation interconnection procedures require transmission system studies to identify where the grid needs to be upgraded to handle increased loads or new power plants. But how much investment is necessary and who decides? Who should bear the costs of transmission upgrades?

*Congestion contracts are financial instruments that entitle the holder to receive congestion payments collected on a particular transmission path.

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Allocations of costs and benefits to specific generating projects and transmission service requests depend on their sequence. How should the ISO evaluate service requests and interconnection applications by competing developers when it does not know which plants will be built or which contracts will be signed? Will owners of existing transmission rights be compensated for the effects of new facilities? Since constraints are network phenomena, cost and benefit assignments will always be somewhat arbitrary and vulnerable to attack.

Structural Problems

- **Ownership of the existing grid is fragmented.** Over 100 private companies and a number of federal, state, and local governments and cooperatives own the existing transmission assets. The nature of the network makes it difficult for any of these parties to act unilaterally to change the grid because their actions may be detrimental to others. Even if they are able to act, the net effect of many decisions made on the basis of only a small part of the network will be unlikely to optimize the entire grid.

- **Unbundling is only partially accomplished.** Many transmission owners also own generation, and they will undoubtedly consider the effect of grid investments on those assets.

- **ISOs are nonprofit institutions.** Lacking a profit motivation, the ISOs will make investment decisions based on political compromises and other criteria. This decision structure is more likely to favor goldplating or underinvestment, not optimization.

- **The ISO is focused on reliability.** The ISOs were created as a way to provide open access while maintaining reliability. Often there is no clear decision-making process, and where processes are articulated, they utilize committee structures with complex voting rules. The ISO has no motive to initiate an investment unless reliability is threatened.

- **ISOs depend on the transmission owners.** The ISOs do not own the assets they manage and must have the owners' cooperation to modify them. In most cases the ISO can only recommend action, not compel it. The ISO may also have to depend on the utilities' willingness to exercise their power of eminent domain to condemn land for new rights of way to overcome fierce local opposition.

- **Politics are inevitable.** As the entity charged with managing the grid, the ISO is caught between competing interests (see Figure 6). The costs and benefits of transmission investments, once internalized by a vertically integrated utility and recovered in average-cost prices set by regulators, will fall on different parties in the future. Restructuring has created natural adversaries where previously there was only one entity. State and federal government intervention is likely, especially if voters complain that they will see little of the commercial benefits of the capital expenses they pay for in rates, or if reliability is threatened. Several governors and members of Congress have already indicated their desire to maintain their states' low-cost power as a way to support economic development and as a populist campaign position. The technical complexity of the issue and the lack of available information outside the ISO and transmission owners' hands will cause suspicion of the ISO and the transmission-owning utilities unless the ISO is able to cast itself as an honest broker.

None of the ISOs in operation or under development is well equipped to address the complex technical, economic, business, regulatory, and political issues that surround transmission planning and investment in a restructured world. The emerging structure—ISOs with committees that recommend when and how to modify the grid owned by multiple utilities with competing interests—is a recipe for gridlock.

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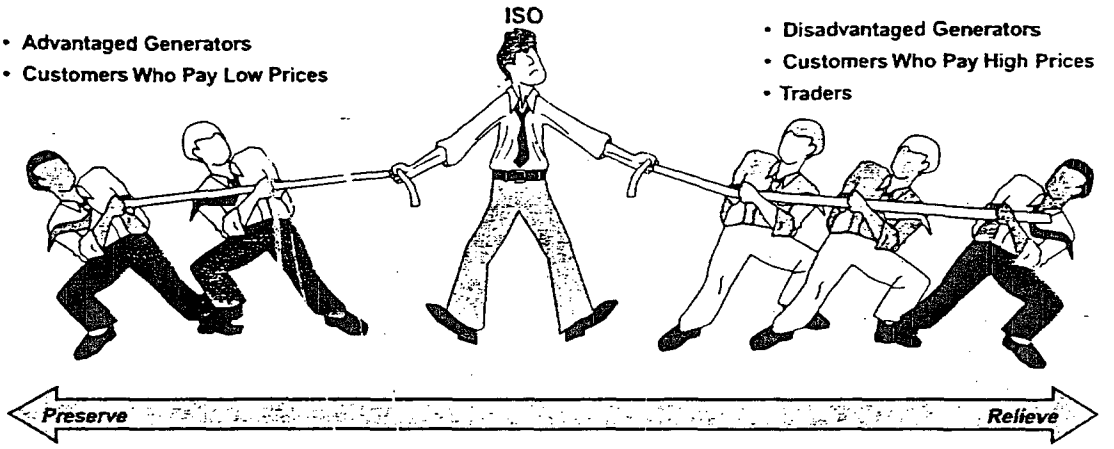
Figure 6

Conflict Is Inevitable in Addressing Transmission Constraints



Source: Cambridge Energy Research Associates.
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What Are the Implications of Gridlock?

What does gridlock mean for the North American electric power industry? CERA sees five major implications:

Investment Bias in Favor of Generation

There are many developers weighing the costs and benefits of generating plant investments and acting on projects that offer an attractive rate of return, but no one is evaluating the costs and benefits of potential transmission investments. This lack of attention means that when both generation and transmission projects are attractive options to capture a particular benefit, the generating plant is the one likely to be built even if the overall cost-benefit analysis would favor a transmission project. In effect, gas pipelines connected to new peaking capacity have become an alternative to major new transmission investments.

Increasing Balkanization of Power Markets

As the transmission system is unable to keep pace with load growth and generation investments, congestion will become increasingly frequent. This will tend to isolate regional power markets into smaller and smaller areas, especially during times of peak loads. Taking advantage of the marketers' inability to wheel power, developers will build plants and cogeneration facilities near industrial facilities, municipalities, and other loads. Ultimately, end-users frustrated by price volatility or perceived market power may install their own generators. This balkanization will make the existing transmission congestion contracts increasingly valuable assets.

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The October 28, 1998, decision by the FERC regarding a cogeneration facility in Maine is an important signpost for balkanization. The FERC struck down the New England Power Pool's (NEPOOL's) long-standing requirement that new generators be fully integrated with the pool, meaning they must invest in transmission that allows them to serve loads anywhere in the region. In contrast, existing generators have the option to pay for other generators on the system to be ramped up or down, or "redispatched" to accommodate their transactions when constraints arise. By allowing new generators to substitute redispatch for transmission upgrades, the FERC has encouraged balkanization and made it less expensive to build generation—potentially reducing the need for transmission upgrades in the first place.

Growing Price Volatility, Falling Liquidity, and Persistent Price Differentials

The loss of load and resource diversity that comes with balkanization will amplify the natural volatility of the wholesale power market. Price differentials will persist because there will be only limited ability to arbitrage them through the natural gas pipeline system. In the longer term, power market liquidity will develop much more slowly, and generation market concentration will increase. This may lead to chronically inefficient wholesale and retail power markets.

Volatility will create a booming market in hedging instruments—particularly for the more liquid trading points. Traders, retail energy merchants, and large industrial and commercial users need to insulate themselves from price volatility and the growing risk of curtailment. This means a demand for liquid, location-specific financial hedging instruments.

Consolidation of power traders will be another natural result of increased volatility, as demonstrated in the fallout from the June 1998 Midwest price spikes: small power marketers without adequate financial strength will not be able to convince potential trading partners of their creditworthiness, and players unable or unwilling to bear the financial risks of volatility will exit the business. Volatility and balkanization also favor scale because larger trading organizations can hedge by controlling assets and/or taking positions in multiple regions and have the resources to develop a sophisticated understanding of the transmission system.

Reliability Is Threatened

As existing systems age and load grows, gridlock causes increased congestion and more frequent equipment failures. Larger power systems are inherently more reliable than small ones because they are less vulnerable to a single contingency and the operators have more options available to them when contingencies occur. Ultimately, reliability problems emerge as a greater number of highly concentrated markets are forced to operate independently.

Experiments with Transmission Companies

Pressure for further structural and regulatory changes is already building as the industry begins to question long-term viability of the ISO model. Several utilities are developing for-profit independent transmission companies ("grid company" or "gridco") that they believe will solve many of the problems that are causing gridlock (see Figure 7). These companies would continue to be regulated monopolies, but they would be independent of both the generators and the distribution utilities.

The combination of control and ownership gives grid companies three major advantages over ISOs:

- A grid company will have a profit motive to encourage action and guide its decisions.
- Control of operation and pricing would make it substantially easier for grid companies to raise the capital necessary to improve the transmission network.

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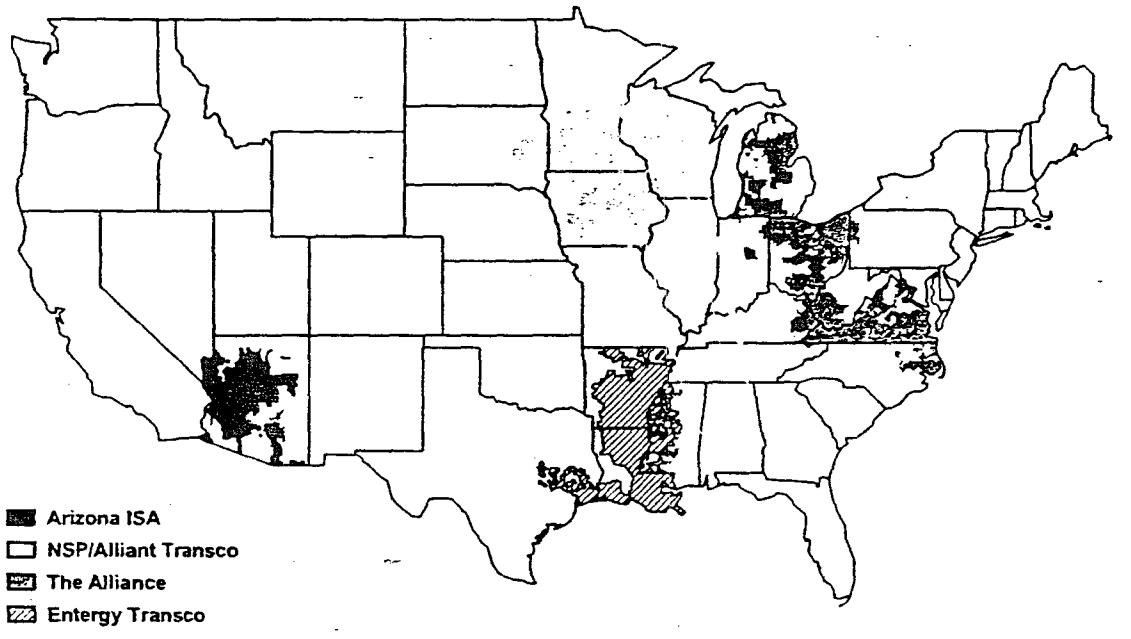
Figure 7

Proposed Independent Transmission Companies
(Utility Participation as of March 1999)



Source: Cambridge Energy Research Associates.
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- Grid companies will have more effective governance because their management teams and boards of directors have a clear motivation to identify and execute profitable investments. In contrast, ISOs are governed either by stakeholder boards where coalitions of members have the power to block action or by expert boards of directors with no stake in the outcome of their decisions.

Are Grid Companies the Answer?

If the root of gridlock is lack of incentives, then incentives are also the way to solve the problem. For-profit grid companies address some but not all of the necessary elements. Transmission management institutions, whether nonprofit or for-profit, must have incentives to

- maintain reliability and safety by buying ancillary services, operating the grid, and controlling maintenance and generator and load interconnections
- offer nondiscriminatory access to the grid
- expand quickly to achieve a critical mass to internalize loop flows, enhance reliability, and eliminate rate pancaking

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- align their geography with the extent of the transmission system—not regulatory boundaries
- operate and price transmission to facilitate an efficient market for electric power
- invest to optimize the efficiency of the power market in the long term
- adopt new technologies such as high-voltage direct current (HVDC), superconductivity, power flow controllers, and information technology where appropriate

Although these criteria are easy to articulate, they will be difficult to implement. The complexity of the problem creates the potential that actions will have unintended consequences. For example, performance-based rates can unintentionally create the incentive to minimize costs by deferring maintenance or avoiding investments, potentially leading to chronic underinvestment or reliability problems.

Some of the goals listed above are in conflict—for example, maintaining reliability while encouraging an efficient, unfettered market. One conflict that directly affects the gridlock problem is the potential contradiction between offering nondiscriminatory access to generators and making investments in transmission. Incentives must create the proper balance between transmission and generation, which often compete to be the marginal source of capacity and energy in the market. Without careful attention to incentives, a monopoly grid company or ISO will favor its own transmission solutions over new generation.

Who Holds the Key?

The consequences of gridlock—inefficient investment, balkanization, market failure, unreliable electricity—are severe, but they may not be severe enough to precipitate a crisis. Without such a crisis, the industry and the FERC must both realize there is a problem before there will be any urgency to break the stalemate. Recent innovative grid company proposals are a sign that transmission owners are beginning to recognize the current state of paralysis. The FERC's upcoming NOPR on regional transmission entities will be an important indicator of its understanding of gridlock. The worse it perceives the problem to be, the more radical its NOPR is likely to be. The NOPR could well cause transmission issues to emerge as the dominant issue of electric restructuring in 1999.

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MARK J. SMITH, CERA Associate Director, North American Electric Power specializes in energy industry structure, economics, marketing, and strategic planning. Immediately prior to joining CERA Mr. Smith assisted in the start-up of the California Independent System Operator (ISO). Before his assignment at the ISO, he spent eighteen years with the Pacific Gas & Electric Company as, among other posts, Director, Revenue Requirements and Director of Pricing. His diverse assignments included responsibilities for regulatory policy analysis, marketing and contract negotiation. He received a BS from Arizona State University and an MA from New Mexico State University. He is based in CERA's California office.

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Interagency memo
1 pag to McNally

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Memo to McNally

RAILROADS AND COAL

Because of coal's importance to the economy and because it is consumed in huge quantities all over the country, while production is focused in a limited number of areas, an efficient coal transportation system — with railroads at its core — is critical to our nation's economic well-being.

According to the U.S. Department of Energy's Energy Information Administration (EIA), some 65 percent of coal shipments were delivered to their final U.S. destinations by rail in 1999. The rail share is far higher than water (14 percent); trucks (11 percent); and the aggregate of conveyor belts, slurry pipelines, and tramways (10 percent). Over the past decade, the rail share has trended slightly upward, largely reflecting the growth of coal from the Powder River Basin in northeast Wyoming and southeast Montana that often moves long distances by rail.

Coal is by far the most important single commodity carried by rail. In 1999 (the latest year for which data are available), coal accounted for 26 percent of carloads, 44 percent of tonnage, and 22 percent of revenue for Class I railroads.

Coal-fired power plants, which consume the vast majority of coal in this country, compete against one another and against power plants fueled by other energy sources. For example, non-coal fuel sources account for nearly half of U.S. electricity generation. Consequently, railroads must work closely and cooperatively with mines and utilities to maximize efficiencies and enhance competitiveness. Over time, for example, higher capacity freight cars (which now carry almost 110 tons of coal per car on average) and more powerful locomotives have increased railroads' coal-carrying efficiency significantly. Highly-efficient unit trains, which carry 50 or more carloads of coal from a loading facility straight through to a customer without interruption using dedicated equipment, account for most rail coal shipments.

Railroads have worked hard to keep service as responsive, and rates as low, as possible. Since it recognizes both distance and weight, revenue per ton-mile (RPTM) is a useful surrogate for railroad rates. In 1999, rail RPTM for coal was 1.64 cents, easily the lowest such figure among all major commodity groups. In inflation-adjusted terms, 1999 RPTM for coal was 61 percent lower than in 1981 and 35 percent lower than in 1990.

Numerous studies have confirmed that rail coal rates have been falling steadily. For example, an April 1999 study by the General Accounting Office found that "In general, real rail rates for coal shipments have fallen since 1990." More recently, an October 2000 EIA study examined changes in railroad coal rates. The EIA's findings were unambiguous: "Although the share of coal transported by railroads increased, the average rate per ton to ship contract coal by rail fell steadily (a 25.8 percent decline) during the study period. The rates for coal in all sulfur categories were lower in 1997 than in 1988." EIA noted that "the decline in average contract coal rail rates during the study period was a response to competitive markets."

Today, many of our nation's coal mines, coal-fired power plants, and the railroad lanes serving them are at or near full capacity. Rail coal volume in 2001 through March is higher than the same time period of any recent year, and is up 7.2 percent over last year — reflecting both the higher demand for coal in light of high natural gas prices and the efficient, cost-effective service railroads are providing.

Economic Impact of U.S. Freight Railroads

Freight railroads move just about everything — from lumber to vegetables, from coal to orange juice, from grain to automobiles, from chemicals to scrap iron — and connect businesses with each other across the country and with markets overseas. They also contribute billions of dollars to the economy through investments, wages, purchases, and taxes.

America's Freight Railroads Carry...

- More than 40 percent of the nation's intercity freight;
- Approximately 70 percent of vehicles from domestic manufacturers;
- 64 percent of the nation's coal to coal-fired power plants (coal generates more than 50 percent of the nation's electricity);
- Some 40 percent of the nation's grain.

...and Move Tens of Millions of Tons Every Day

- Class I railroad freight volume in 1999 was 1.43 trillion ton-miles. U.S. railroads hauled more than 27 million carloads of freight in 1999, including more than 9.0 million intermodal trailers and containers. Intermodal volume has nearly tripled since 1980.
- Class I railroads operated 20,256 locomotives in 1999 which hauled a fleet of 1,368,836 freight cars with an aggregate capacity of 134.4 million tons — an increase of 24 percent since 1990. It would take three million trucks to equal the capacity of the rail car fleet.
- U.S. railroads operated 145,000 route miles in 1999, enough to circle the globe almost six times.

Railroads Move Freight at a Lower Cost Than Ever Before

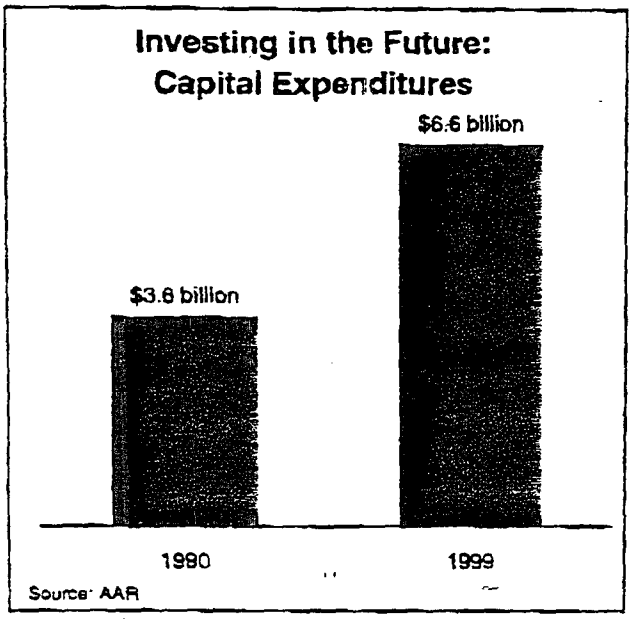
- On average it costs 28 percent less to move freight by rail now than it did in 1981, and 57 percent less in inflation-adjusted dollars. These rate reductions have saved American consumers tens of billions of dollars.

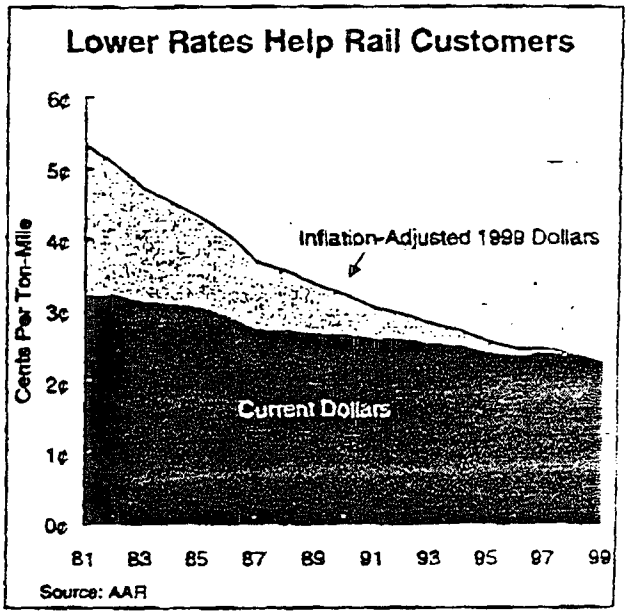
Railroads Directly Boost the Economy

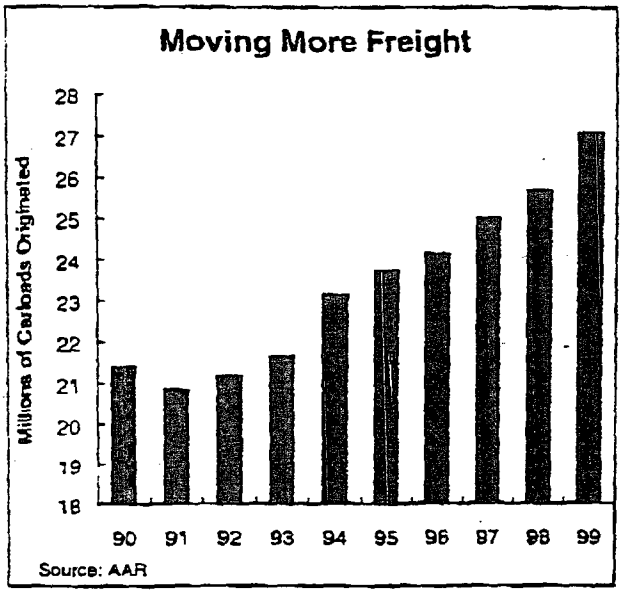
- U.S. freight railroads directly contribute some $13 billion a year to the economy in wages and benefits to nearly 200,000 employees and billions more in purchases from suppliers.
- Almost 700,000 retired railroad workers and family members receive $8 billion in retirement benefits each year.
- In 1999, Class I railroads paid $2.3 billion in payroll taxes, $379 million in federal income taxes (in addition to incurring $1.3 billion in deferred income tax liability), and nearly $694 million in other taxes.

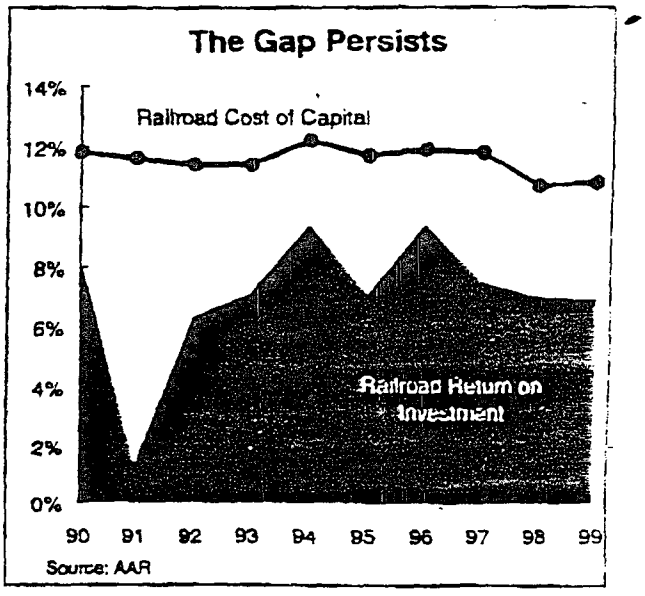
America's Freight Railroads

Economic Facts-At-A-Glance









Investment: Essential to Railroads and Their Customers

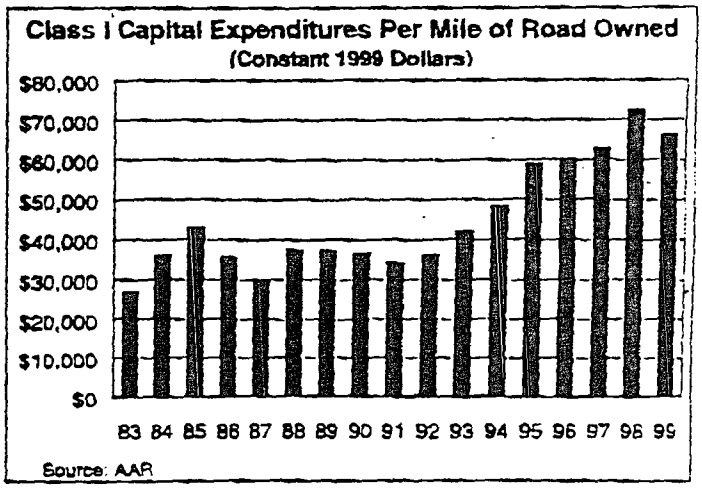
As the U.S. freight railroads well know from their experiences in the years before the Staggers Rail Act of 1980, a rail system deteriorates rapidly when railroads are capital-starved. Capital is the lifeblood of the freight rail industry and today, thanks to infusions of capital and the massive investment made possible by deregulation, railroads have been reborn. Since 1980, major freight railroads in the United States have invested more than $263 billion to maintain and improve their infrastructure and equipment, and to create a national system that is the envy of the world.

Prior to Deregulation, Rail Investment Was Woefully Deficient

- In the 1970s, railroads simply lacked the ability to invest at adequate levels. Due largely to stifling regulation, during the 1970s the rail industry's rate of return averaged two percent and rail bankruptcies were commonplace.
- In the mid-1970s, 25 percent of the nation's rail miles had to be operated at reduced speeds because of dangerous conditions. Congress estimated that, absent meaningful change, the rail industry's capital shortfall would approach $20 billion by the mid-1980s.

Deregulation Gave Railroads the Means to Invest

- By giving railroads the opportunity to earn revenues sufficient to cover their cost of operations, deregulation sparked an industry transformation.
- As income increased, so did investment. Investment led to greater efficiency, sharply improved safety, better service, and dramatically reduced rates — down 57 percent in real terms from 1981 to 1999.
- Today, U.S. freight railroads reinvest more in plant and equipment as a percentage of revenues than any other major U.S. industrial sector. Class I railroad revenues reached $33.5 billion in 1999. Of that, railroads reinvested $6.6 billion, or 19.8 percent.
- Capital expenditures per mile of road owned were more than $66,000 in 1999, almost 2 ½ times the comparable inflation-adjusted 1983 figure.

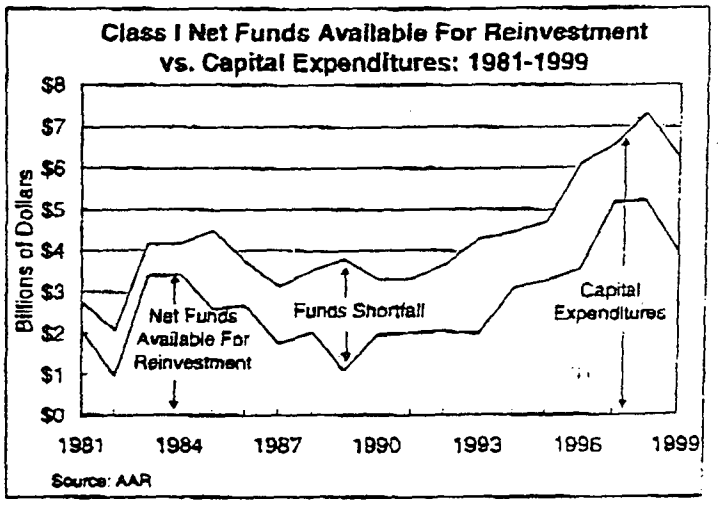


Reregulation Would Threaten Rail Investment and the Viability of the Rail System

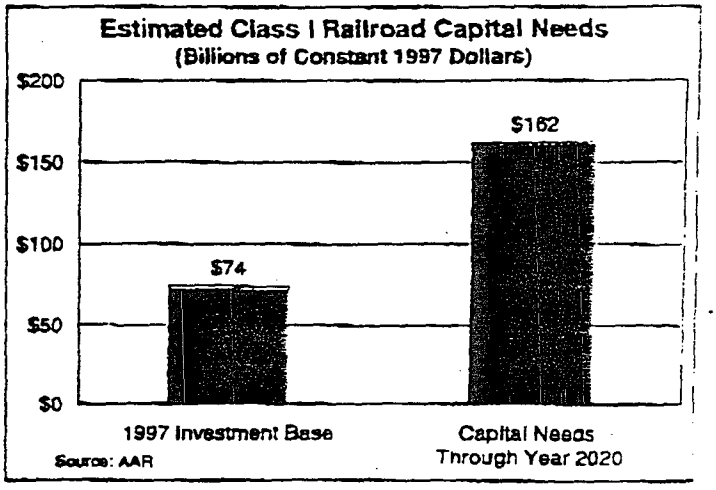
- U.S. freight railroads are overwhelmingly privately owned and operated. Because they receive no appreciable government funding, they must earn enough year after year to cover the massive spending they require.

- The industry is committed to expending the resources needed to continue to improve service, expand capacity, and offer their customers reasonable rates. But, they would be unable to do so if reregulation prevented them from earning revenues and attracting the capital necessary to cover their total costs and make the required level of investment.

- The cash generated by the rail industry since Staggers has been insufficient to sustain the capital investment required. Railroads have found it necessary every year since 1980 to obtain funds from outside sources: from 1981 to 1999, of the cumulative $81.9 billion in capital expenditures, approximately 64 percent was provided from internally-generated funds and 36 percent from external capital providers. Thus, artificial or unrealistic restrictions that impede the rail industry's opportunity to generate sufficient returns will compromise its ability to retain and attract the capital it needs to sustain its investment and operations over the long term.



Railroads will have to invest an estimated $162 billion (in 1997 dollars) by the year 2020 — the equivalent of rebuilding the entire rail system twice — simply to maintain their current share of the freight market. This can occur only if railroads are allowed to operate under a stable and limited set of regulatory constraints.



- Railroads are far more capital intensive than other major

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industries. For example, in 1998 (the latest year for which comparable non-railroad data are available), railroads' capital expenditures were equal to 21.7 percent of revenue, compared to an average of just 3.9 percent for all manufacturing industries.

Similarly, data for Fortune 500 firms in selected industries that are major rail shippers or competitors reveal the capital intensive nature of railroading. Compared on the basis of total assets required per dollar of revenue produced, railroads have significantly higher asset needs — $2.57 of assets for each dollar of revenue produced.

Capital Expenditures as a Percentage of Revenue for Various U.S. Industries: 1998

All manufacturing	3.9%
Food manufacturing	2.6%
Wood product manufacturing	3.0%
Paper manufacturing	5.5%
Chemicals manufacturing	5.1%
Petroleum & coal products mfg	3.7%
Nonmetallic mineral product mfg	5.3%
Primary metal product mfg	4.0%
Fabricated metal product mfg	3.9%
Machinery manufacturing	3.6%
Computer & electr. product mfg	4.8%
Transportation equipment mfg	3.3%
Class I Railroads	**21.7%**

Source: U.S. Bureau of the Census, AAR

Ratio of Assets to Revenues of Fortune 500 Firms for Selected Industry Groups: 1999

	Number of Firms	Total Revenues ($ Billions)	Total Assets ($ Billions)	Ratio of Assets to Revenues
Chemicals	15	$114.4	$162.1	1.42
Food	22	178.6	116.2	0.65
Forest & Paper Products	11	106.3	134.0	1.26
Industrial & Farm Equipment	11	81.2	88.3	1.09
Metals	8	44.2	54.6	1.24
Mining, Crude Oil Production	3	17.0	24.6	1.45
Motor Vehicles & Parts	14	452.8	634.6	1.40
Railroads	**4**	**36.4**	**93.6**	**2.57**
Telecommunications	13	289.6	638.0	2.20
Trucking	2	8.8	4.4	0.50
Gas & Electric Utilities	37	266.3	594.8	2.23

Source: *Fortune*, April 17, 2000

Railroads: Building a Cleaner Environment

Investments in new technology and infrastructure have made the railroad industry environmentally "cleaner and greener" than ever before. Over the past five years alone, railroads have invested billions of dollars in more than 4,000 locomotives that are more fuel efficient and environmentally friendly.

Railroads Are More Environmentally-Friendly Than Other Modes

- The U.S. Environmental Protection Agency (EPA) estimates that for every ton-mile, a typical truck emits roughly three times more nitrogen oxides and particulates than a locomotive. Other studies suggest that trucks emit six to 12 times more pollutants per ton-mile than do railroads, depending upon the pollutant measured.
- According to the American Society of Mechanical Engineers, 2.5 million fewer tons of carbon dioxide would be emitted into the air annually if 10 percent of intercity freight now moving by highway were shifted to rail.
- Railroads are committed to substantial reductions in atmospheric emissions. They endorse an EPA proposal that calls for a 60 percent reduction in nitrogen oxide (NOx) emissions from locomotives manufactured beginning in 2005.
- According to the EPA, railroads account for just 7 percent of total transportation-related NOx emissions and less than 5 percent of transportation-related particulate emissions, even though railroads account for 40 percent of the nation's intercity freight ton-miles.

Railroads Are the Most Fuel-Efficient Form of Ground Transport

- Railroad fuel efficiency has increased 64 percent since 1980, when a gallon of diesel fuel moved a ton of freight an average of 235 miles. In 1999, railroads moved a ton of freight an average of 386 miles per gallon.
- If just 10 percent of the freight moved by highway were diverted to rail, the nation could save as much as 200 million gallons of fuel annually.
- On average, railroads are three times more fuel efficient than trucks.

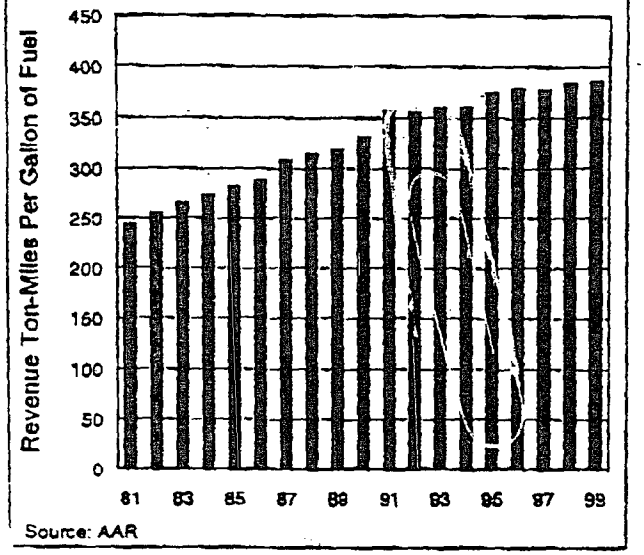
Public Policy

- National transportation policy should recognize the freight railroad advantages in energy efficiency and pollution abatement.

America's Freight Railroads

Environmental Facts-At-A-Glance

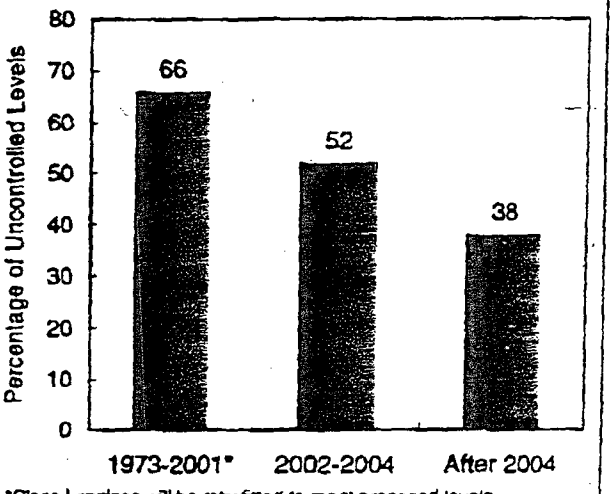
Gains in Railroad Fuel Efficiency



Source: AAR

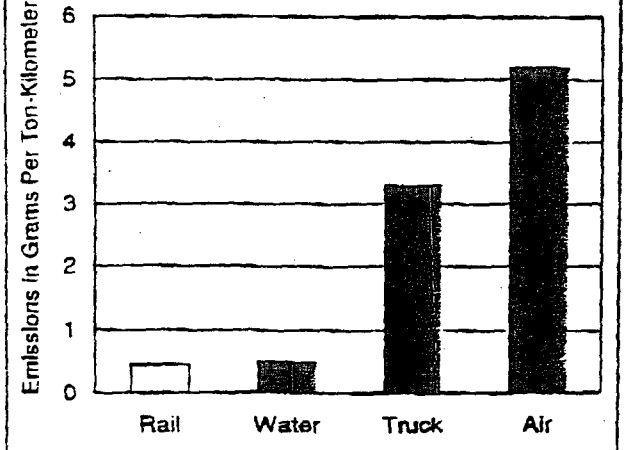
Toward a Cleaner Environment

Railroad Plans to Reduce NOx Emissions



*Class I engines will be retrofitted to meet proposed levels.

Modal Comparisons of Nitrogen Oxide Emissions



Source: Environmental Canada 1994

Railroads: The Best Choice for the Environment

Rank	Oxides of Nitrogen	Volatile Organic Compounds	Particulate Matter	Carbon Monoxide	Carbon Dioxide
1 Most Desirable	Rail	Rail	Air	Rail	Rail
2	Water	Water	Rail	Water	Water
3	Truck	Air	Water	Air	Truck
4 Least Desirable	Air	Truck	Truck	Truck	Air

Source: Environment Canada, Transportation Systems Division, Ottawa, Canada, 1994

Additional comments by Hamberger not included in bullets:

Railroads and barges comprise the foundation of the domestic coal distribution system, together handling three-quarters of all coal shipments. Trucks and conveyor systems generally are used to move coal over shorter distances. Lake carriers and ocean vessels move large coal shipments over water. Association of American Railroads want to remove anticompetitive 4.3 cents sales tax railroad and barges pay in legislation: HR1024 and S661. Railroads move more coal than any other commodity and account for 22 percent of total rail freight and more than 40 percent of total Class I freight tonnage transported.

According to Mr. Edward Hamberger. President of Association of American Railroads, Class I from 1980 to 2000 ton-miles, the movement of a ton of freight one mile, a standard freight volume measurement -- rose from 919 billion to 1.47 trillion, a 60% increase. The rail network is used more intensely and far more productively than in the past, and in some cases running at full track capacity today. For instance, ton-miles per mile of road owned rose from 5.6 million in 1980 to 14.8 million in 2000 a 165% increase. During this period of huge traffic expansion, railroads carefully managed their cost and generated enormous productivity growth 172 % while reducing their operating costs 41% inflation adjusted basis, but operating revenue declined 36%.

As traffic congestion on our highways becomes even more acute and pressure to reduce emissions, conserve fuel and promote safety continues to increase, railroads are likely to be called upon to do even more based on their advantages over other modes. The demand for additional passenger service utilizing freight lines is widespread and growing. In addition to infrastructure capacity, configuration of infrastructure is a critical issue in determining feasibility of running passenger trains on freight-owned tracks. Also passenger railroad companies should be required to work out a deal with freight companies that own the tracks they want to use, the Government should not demand passenger railroads can use these tracks without such agreements. There are different engineering and maintenance standards that will have to be addressed if passenger and freight trains eventually share same tracks, for example curves are different for slower moving freight trains than faster passenger trains. Unfortunately most knowledgeable people would agree that most readily attainable gains of companies sharing the cost of upgrading infrastructure costs have mostly already been made. Gains from this area going forward are more evolutionary not revolutionary. Government should be willing to help with upgrading Class I lines. Believes Government should pass HR1020 for Class II and III railroads.

Since the railroad industry depends on the capital markets to fund a large portion of their investment, and that the return on investment does not provide a return equivalent to alternative investments of similar risk, the railroad companies will be challenged to increase theses returns by say limiting capital expenditures. Railroads will continue to face pressure from investment community to maximize returns and are most likely unable to accommodate the financial demands required to improve infrastructure while trying to appease lenders return on investment requirements.

U.S. RAILROAD MILEAGE

	Owned	Leased	Trackage Rights	Govt. Owned	Other	Total Incl. Trackage Rights	Total Excl. Trackage Rights
Class I Subtotal	88,848	8,642	21,586	1,587	323	120,986	99,400
Regional Railroads	14,473	1,654	2,563	2,409	151	21,250	18,687
Local Railroads	14,149	1,257	1,154	4,158	401	21,118	19,964
S&T Railroads	4,562	255	731	1,646	110	7,304	6,573
Canadian	581	0	976	0	0	1,557	581
TOTAL	122,613	11,808	27,010	9,800	985	172,215	145,205

Source: AAR

367

Summary of
Energy Policy Act Transportation Rate Study: Final Report on Coal Transportation
(U.S. Department of Energy - Energy Information Administration, November 2000, 90 pages)

This study was mandated by a provision in the Energy Policy Act of 1992. It was prompted by concerns of some in Congress that railroads would take advantage of shifts to low-sulfur coal induced by sulfur dioxide emission restrictions by raising their rates for hauling coal, especially low-sulfur coal from the Powder River Basin (PRB).

The study examined changes in transportation rates for coal purchased and delivered under supply contracts of more than one year duration shipped by rail from U.S. producers to certain U.S. investor-owned electric utilities from 1988 to 1997. Confidential rail rate data were obtained from Federal Energy Regulatory Commission (FERC) utility surveys. EIA augmented FERC data with data from the STB's Waybill Sample and industry reports.

Rail coal movements captured by the EIA study represent a majority of all rail coal deliveries to utilities, with the exact percentage varying from year to year. In 1997, for example, the quantity of coal hauled by railroads and covered by the study's augmented database was 367.2 million tons — an amount equal to 65 percent of the 563.3 million total tons of coal railroads delivered to all utilities in 1997. As expected, from 1988 to 1997 the share of low-sulfur coal rose (from 48.4 percent to 64.9 percent of movements), while the share of medium- and high-sulfur coal fell. The study noted that the rail share of total domestic coal tonnage rose from 57.5 percent in 1988 to 61.8 percent in 1997, driven largely by an increase in rail-hauled low-sulfur PRB coal.

The report's findings were unambiguous: "Although the share of coal transported by railroads increased, the average rate per ton to ship contract coal by rail fell steadily (a 25.8 percent decline) during the study period. The rates for coal in all sulfur categories were lower in 1997 than in 1988. ... The general finding of declining rates was also substantiated when the rates were calculated as a rate per ton-mile, a rate per million Btu, or rates between specific supply and demand regions. ... Clearly, the majority of the contract coal shipped by rail during this period traveled via lower real-dollar rates than in earlier years, and there is no evidence of widespread inflation of shipping rates by the major coal-hauling railroads following enactment of the [Clean Air Act Amendments of 1990]. In fact, the greatest decline in coal rail rates per ton — a 36.0 percent decline in constant dollar terms — was for low-sulfur coal, the very category over which concern may have been greatest." The report noted that "the decline in average contract coal rail rates during the study-period was a response to competitive markets..."

A footnote in the study notes that "Because the rate data in this report represent regional data aggregations, they do not address alleged inequities in rates to and from isolated locations, or for "captive" shippers (with only one practical coal transportation option), or for small shippers who may not have access to technologically efficient loading equipment or may not qualify for high volume discounts." Rail detractors can be expected to seize upon this statement to dismiss the unambiguous major finding of the report: significantly lower rail rates for contract coal essentially across the board from 1988 to 1997.

Williams, Ronald L

From: Joel Rubin
Sent: Friday, February 16, 2001 3:01 PM
To: Anderson, Margot
Cc: Abe Haspel@DOE%HQ-NOTES; Buddy Garland@DOE%HQ-NOTES; Zimmerman, MaryBeth; Jeffery, Nancy; Beschen, Darrell
Subject: National Energy Strategy: Chapter 2

Chapter 2_Impacts_2.16.01.doc Margot -

Please find chapter 2 attached... thank you!

Joel

20171

65

Early e-mail from same.

Jeremy Symons
EPA, Office of Air and Radiation
(202) 564-9301
Fax: (202) 501-0394

"Kelliher, Joseph"
<Joseph.Kelliher@hq.doe.gov>

03/30/2001 06:31 PM

To: "Anderson, Margot" <Margot.Anderson@hq.doe.gov>, Jeremy Symons/DC/USEPA/US@EPA
cc: "Kolevar, Kevin" <Kevin.Kolevar@hq.doe.gov>
Subject: RE: energy efficiency one-pager

> -----Original Message-----
> From: Anderson, Margot
> Sent: Friday, March 30, 2001 5:40 PM
> To: 'Symons.Jeremy@epamail.epa.gov'
> Cc: Kelliher, Joseph; Kolevar, Kevin
> Subject: energy efficiency one-pager

> Margot
>

(b)(_)

<Lawrence.Mansueti
@ee.doe.gov>

04/09/01 04:19 PM
Please respond to
Lawrence.Mansueti

To: <KMurphy@osec.doc.gov>
cc: <DCOHEN1@osec.doc.gov>, <Jane.S.Hannuksela@noaa.gov>,
<Craig.R.O'Connor@noaa.gov>,
<Paul.Carrier%HQMAIL%HQDOE@ee.doe.gov>,
<william_bettenberg@ios.doi.gov>,
<charles.m.hess@usace.army.mil>,
<michael.r.walsh@wrc01.usace.army.mil>,
<darrell.g.nolton@wrc01.usace.army.mil>,
<mjanopaul@fs.fed.us>, <andrew_d._lundquist@ovp.eop.gov>,
<karen_y._knutson@ovp.eop.gov>, <Robert.Dixon@ee.doe.gov>,
<William.Parks@ee.doe.gov>, <Don.Richardson@ee.doe.gov>,
<Margot.Anderson%HQMAIL%HQDOE@ee.doe.gov>,
<Michael.York@ee.doe.gov>
Subject: DOE's Comments on NEP Hydro - Energy Task Force draft DOC recom

Kevin --

Here are DOE's comments on the draft recommendations coming out of last Wednesday's hydro licensing working group meeting:

35ASO574

20364

35AS0574

20365

DOE021-0819

Murphy/HCHB/Osnet@osnet, Jane.S.Hannuksela@noaa.gov
04/06/01 cc: Peter
Robbins/HCHB/Osnet@osnet, Craig.R.O

 - attach1

 - hydro.docstaffdraft.version1.wpd

35A3C574

20366

DOE021-0820

'Connor@noaa.gov
05:38 PM Subject: Hydro - Energy Task Force

Attached is a revised version of the document Jane sent yesterday. Please provide comments ASAP.

Thanks,
Dan

(See attached file: hydro.docstaffdraft.version1.wpd)

Daniel Cohen
Office of the General Counsel
U.S. Department of Commerce
14th and Constitution Avenue, N.W., Room 5876
Washington, D.C. 20230
202-482-4144 - Phone
202-482-0512 - FAX
DCOHEN1@DOC.GOV

(See attached file: hydro.docstaffdraft.version1.wpd)

35ASC574

20367

DOE021-0821

'Connor@noaa.gov
05:38 PM Subject: Hydro - Energy Task Force

Attached is a revised version of the document Jane sent yesterday. Please provide comments ASAP.

Thanks,
Dan

(See attached file: hydro.docstaffdraft.version1.wpd)

Daniel Cohen
Office of the General Counsel
U.S. Department of Commerce
14th and Constitution Avenue, N.W., Room 5876
Washington, D.C. 20230
202-482-4144 - Phone
202-482-0512 - FAX
DCOHEN1@DOC.GOV

(See attached file: hydro.docstaffdraft.version1.wpd)

35ASC0578

20369

DOE021-0823

<Margot_Anderson@hq.doe.gov>
03/20/01 09:01 PM
Please respond to
Margot_Anderson

To: <KMurphy@osec.doc.gov>
cc:
Subject: RE: Commerce suggestions for draft chapters 7 & 8

Thanks!

-----Original Message-----
From: KMurphy@doc.gov%internet [mailto:KMurphy@doc.gov]
Sent: Tuesday, March 20, 2001 8:58 PM
To: Anderson, Margot
Subject: Commerce suggestions for draft chapters 7 & 8

Hi Margot -

Unfortunately I have a conflict and won't be able to make the meeting in the morning for the remaining DOE chapters. I do have a few very minor additions/comments.

35AS0585

20582

(b)(1)

125

<Margot_Anderson@hq.doe.gov>
03/20/01 09:01 PM
Please respond to Margot_Anderson

To: <KMurphy@osec.doc.gov>
cc:
Subject: RE: Commerce suggestions for draft chapters 7 & 8

Thanks!

-----Original Message-----
From: KMurphy@doc.gov%internet [mailto:KMurphy@doc.gov]
Sent: Tuesday, March 20, 2001 8:58 PM
To: Anderson, Margot
Subject: Commerce suggestions for draft chapters 7 & 8

Hi Margot -

Unfortunately I have a conflict and won't be able to make the meeting in the morning for the remaining DOE chapters. I do have a few very minor additions/comments.

Thanks for considering these. I'll call you to follow up. Good luck at the meeting...
-Kevin

35ASO525

20634

DOE021-1088

(b)(-) 12v

<Margot.Anderson@hq.doe.gov>
04/13/01 12:46 PM
Please respond to Margot.Anderson

To: <KMurphy@osec.doc.gov>
cc:
Subject: RE: Chapter 8 edits

Received. thanks.

-----Original Message-----
From: KMurphy@doc.gov%internet [mailto:KMurphy@doc.gov]
Sent: Friday, April 13, 2001 12:18 PM
To: Anderson, Margot
Subject: Chapter 8 edits

Hi Margot, good talking to you. Per our discussion, a few minor changes at this point for "Hydro Generation" section in Ch. 8:

Thanks for your help!

-Kevin

35AS0525

20635

DOE021-1089

(c) (1) (27)

<McManusMT@state.gov>

03/19/01 07:30 PM
Please respond to McManusMT

To: <KMurphy@osec.doc.gov>
cc: "Gallogly, Stephen J" <GalloglySJ@state.gov>, "Wheeler, Evelyn" <WheelerE@state.gov>
Subject: RE: Suggestion for Energy Report

-----Original Message-----
From: KMurphy@doc.gov [mailto:KMurphy@doc.gov]
Sent: Monday, March 19, 2001 5:47 PM
To: mcmanusmt@state.gov
Subject: Suggestion for Energy Report

Matthew -

I have a few suggestions for State to incorporate into its draft Chapter 10. As you probably know, Commerce has a heavy international trade component, so we would like to recommend some language to reflect some of its priorities.

Thanks, and I'll see you tomorrow.

-Kevin

35ASO525

20636

DOE021-1090

(b)(3) 128

<WheelerE@state.gov>

03/27/01 08:14 AM
Please respond to WheelerE

To: <KMurphy@osec.doc.gov>
cc:
Subject: RE: Suggestions for State chapter

thanks, Kevin. I did have your earlier comments.
e

Evelyn Wheeler
EB/ESC/IEC/EPC - Room 3535
Phone: (202) 647-4557
Fax: (202) 647-4037
This message is unclassified under precepts of EO 12958.

-----Original Message-----
From: KMurphy@doc.gov [mailto:KMurphy@doc.gov]
Sent: Monday, March 26, 2001 7:18 PM
To: WheelerE@state.gov
Subject: Suggestions for State chapter

Hi Evelyn -

Many thanks. My apologies for having you change this. Please don't hesitate to contact me with any questions -- 482-4127.

-Kevin

(See attached file: Chapter 3 March 27 doublespaced.doc)

 - Chapter 3 March 27 doublespaced.doc

 - PIC08697.PCX

35ASO548

20735

DOE021-1189

(b)(.) (153)

<Lawrence.Mansueti
@hq.doe.gov>
04/10/01 05:43 PM
Please respond to
Lawrence.Mansueti

To: <KMurphy@osec.doc.gov>
cc:
"/S=Jane.S.Hannuksela@noaa.gov@DOE/O=HQ-NOTES/P=USDOE
/A=ATTMAIL/C=US/"
</S=Jane.S.Hannuksela#064#noaa.gov#064#DOE/O=HQ-NOTES/
P=USDOE/A=ATTMAIL/C=US/@hq.doe.gov>,
"/S=DCOHEN1@DOC.GOV@DOE/O=HQ-NOTES/P=USDOE/A=ATT
MAIL/C=US/"
</S=DCOHEN1#064#DOC.GOV#064#DOE/O=HQ-NOTES/P=USD
OE/A=ATTMAIL/C=US/@hq.doe.gov>,
"/S=Craig.R.O'Connor@noaa.gov@DOE/O=HQ-NOTES/P=USDOE/
A=ATTMAIL/C=US/"
</S=Craig.R.O'Connor#064#noaa.gov#064#DOE/O=HQ-NOTES/P
=USDOE/A=ATTMAIL/C=US/@hq.doe.gov>,
"william_bettenberg@ios.doi.gov@DOE%HQ-NOTES"
<william#u#bettenberg#064#ios.doi.gov#064#DOE%HQ-NOTES@
hq.doe.gov>,
"/S=charles.m.hess@usace.army.mil@DOE/O=HQ-NOTES/P=USD
OE/A=ATTMAIL/C=US/"
</S=charles.m.hess#064#usace.army.mil#064#DOE/O=HQ-NOTE
S/P=USDOE/A=ATTMAIL/C=US/@hq.doe.gov>
Subject: Re: Draft Hydro Licensing Recs

Kevin --

Larry Mansueti, Office of Energy Efficiency and Renewable Energy
Paul Carrier, Office of Policy
U.S. DOE

<KMurphy@doc.gov> on 04/09/2001 06:18:58 PM
To: karen_y._knutson@ovp.eop.gov@internet@HQMAIL,
andrew_d._lundquist@ovp.eop.gov@internet@HQMAIL
cc: Paul Carrier@HQMAIL, Lawrence Mansueti/EE/DOE@DOE@HQMAIL,
william_bettenberg@ios.doi.gov@internet@HQMAIL,
michael.r.walsh@wrc01.usace.army.mil@internet@HQMAIL,

35AS0550

20746

DOE021-1200

03/30/01 11:19 FAX 001

(154)

U. S. DEPARTMENT OF ENERGY

Washington, DC 20585

OFFICE OF THE SECRETARY

FACSIMILE NUMBER: 202-586-7210

CONFIRMATION NUMBER: 202-586-3500

DATE: 3/30/01

TO: K. Murphy FAX #: 482-4636

PHONE #:

FROM: Joe Kelliher PHONE #:

This transmittal consists of 8 page(s) including cover sheet.

MESSAGE:

FERC's Recommendations

35ASO553

20748

DOE021-1201

(155)

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, DC 20426

OFFICE OF THE GENERAL COUNSEL

March 23, 2001

Mr. Joe Kelliher
United States Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Dear Mr. Kelliher:

This is in response to your March 23, 2001, request that the Commission staff provide their views and ideas on matters or areas that the Administration may want to consider as part of its National Energy Strategy. You also requested a factual summary of the recent California ISO filing. Responses addressing your request are attached.

As you know, the Commission staff is happy to provide their expertise and support to the Administration in its development of this important strategy.

Sincerely,

Kevin P. Madden
General Counsel

Attachment

cc: Secretary Abraham
Chief of Staff Andrew Card

35ASO553

20749

Williams, Ronald L

From: Poche, Michelle [Michelle.Poche@ost.dot.gov]
Sent: Saturday, March 24, 2001 2:49 PM
To: Anderson, Margot
Subject: RE: DOE comments/edits

Margot,

----Original Message----
From: Anderson, Margot [mailto:Margot.Anderson@hq.doe.gov]
Sent: Saturday, March 24, 2001 8:59 AM
To: 'Michelle.Poche@OST.DOT.Gov%internet'
Cc: Charles Smith (E-mail); Kelliher, Joseph
Subject: RE: DOE comments/edits

Michelle,

Here's a nice graphic to use in chapter 9 on pipelines. We'll be sending more to you Monday. Hope our edits you received from Charlie were useful.

Margot

----Original Message----
From: Charles_M._Smith@ovp.eop.gov%internet
[mailto:Charles_M._Smith@ovp.eop.gov]
Sent: Friday, March 23, 2001 8:27 AM
To: Michelle.Poche@OST.DOT.Gov%internet
Cc: Andrew_D._Lundquist@ovp.eop.gov%internet;
Karen_Y._Knutson@ovp.eop.gov%internet
Subject: DOE comments/edits

Michelle:

20837

DOE021-1290

Some suggested comments/edits on your chapter from DOE.

(See attached file: energyinfrastructure2.doc)

20838

DOE021-1291

The Communications Collective

6414 Dahlonega Road, Bethesda, MD 20081 • Tel. (301) 229-7761 • Fax (301) 229-8370

release 1st page

(b)(6)

April 10, 2001

To: ~~Charlie Smith~~ Margot Anderson
From: Joan O'Callaghan
Re: Comments on Chapters 1 & 2

Following are 4 pages of comments and 15 pages of the edited chapters 1 & 2. I've divided the comments into general, photo, and specific categories. The specific comments correspond to the circled numbers in the margins of the hard copy.

General Comments

- This revised draft attempts to put all of the text into what I consider to be the most logical order. I moved around so many sections that they'll probably be choppy in places. Once they're moved to my suggested locations, we can read through the chapter and smooth it out, and create more compelling introductory paragraphs and headings.

- As we've discussed, none of the chapters will have a Key Points section up front. Where I deleted text from the Key Points on the first page, I did so because the same information appears elsewhere in the chapter.

- I wanted to comment on the status of the photos and graphics, as well as commenting on and editing the text. However, given the tight time frame within which we're working, I thought it might be prudent to forward these comments first.

Photo Comments

- We'll need full-size printouts of all the line graphs.

- You were going to develop a new graph for the first line graph that appears in chapter 2 (Taking Stock).

- We have two candidates for the chapter opener: New York City at night (w/ the Chrysler Building as the focus) and San Francisco at night.

- Other available photos include: a barge tanker unit, traffic congestion, looping electric transmission lines, a couple of other electric transmission images, workers high up on electrical transmission equipment, steel rolling, drill rig equipment, snaking pipelines, oil derrick pump, plane flying over city, geothermal & nuclear energy,

Specific Comments for Chapter 1

1. If everything is working so well, why are we bothering with this report?
2. This information is covered under the supply section.
3. Please incorporate this text into the supply section.
4. As I mentioned in chapter 2, chapters 1 & 2 don't have any relevant sections into which we can incorporate this text. So we might merge it into the caption for the congested traffic image.
5. Once edited, this text might serve as a caption for the pie chart. As I mentioned under my comment #0 for chapter 2, we may want to use the last sentence as a caption for a congested traffic photo.
6. We'll need to delete this information from the main text and convert it to a footnote. When we do this, please keep in mind that we're trying to avoid making this document look like a government publication.
7. This information is a given.
8. As I've noted under comment #26 of chapter 2, we're bombarding the readers w/ statistics, at the expense of communicating a story to them that they'll retain after reading it once. If we're going to use statistics, we need to concentrate on why they should matter to readers. Also, some of this information is already on the last page of chapter 2 (Taking Stock). Please incorporate this into that Energy Efficiency section.
9. This is covered on p. 9 of chapter 2.
10. We can use this as a caption with the steel rolling photo.
11. We can use this as a caption with the line graph.
12. Please incorporate this into the energy efficiency section at the end of chapter 2.
13. We can delete this from the main text and use it in an expanded caption for the graph.

Specific Comments for Chapter 2

0. (FYI, I've labeled this comment zero because this was near the end of my review of chapter 2.) I don't know where to place this text, because there's no section in this chapter that addresses these issues. I suggest using it as a caption (1) w/ the proposed pie chart or (2) w/ the congested traffic image we've designated for this chapter.
1. Note that the text at the bottom of page 2 says that the regional crisis will last *at least* through 2003.
2. Please ignore the placement of this footnote for the time being. We'll take care of it once you review and respond to my edits and comments.
3. Charlie, this is the figure you want to replace.
4. Will the readers of this report understand what the "state siting process" is?

5. This is only part of the story. We need to explain why that strong interest fizzled.

6. What's your stance on contractions (e.g., isn't, aren't)? Do you care? I think they enhance and accelerate the legibility of the text and are friendlier than the more formal fully spelled-out words.

7. Should you explain here why generating capacity lagged behind demand? Was it for the same reasons as the California situation--the siting process?

8. We should you explain in the main text or in a footnote why hydropower resources were low and plant outages were higher than normal.

9. You should finish off this sentence with an explanation of how this additional 3,300 MW relates to the region's demand, as you've done w/ California. Some specific context is needed here.

10. You've already said this on the previous page.

11. Rather than saying "have been severely impacted," can we say "are suffering the consequences of high unemployment"?

12. I don't know what you mean by "capacity margins," and I don't know what a desirable capacity margin might be.

13. Again, I know this isn't a desirable situation, but I don't know what "significant erosion" means in this context or what its consequences might be.

14. Are you talking about California here?

15. I'd like to convert this to a caption for a pie chart.

16. Often when too many statistics are thrown at the reader, the message is obscured.

17. I think we should delete this. It sounds contradictory to the information in the next paragraph, and the abundance and lower prices have already been covered.

18. Is the last part of this sentence saying *how quickly* this lost generation should be replaced? Should this instead be a question of what alternative sources of energy will fill the gap in this lost generation?

19. This is very vague.

20. Is this saying that the most recent completed construction of a nuclear power plant was in October 1973?

21. I don't know what you mean by "commence acceptance." Also, this sentence assumes that the readers have more knowledge of this issue than I think they'll have.

22. Why have you jumped from the second-largest source (nuclear) to the fourth? Shouldn't the natural gas section come before the hydropower section?

23. This section and the natural gas section are treated as subsections of the electricity section. However very little of these sections concerns electricity generation. We may want to reconsider the organization of the chapter and its headings.

24. The first two parts of this sentence refer to sectors (i.e., transportation and industry). What sector does this last part refer to--residential and commercial buildings?

25. Shouldn't you explain why it's expected to decline?

26. Again, I'm beginning to get lost with all these statistics. Are all of them necessary? If so, maybe we could move some of them into charts. But I prefer to go a little lighter on the numbers and heavier on the story so the readers will have a better grasp of the issues and trends.

27. Should we turn this into a pie chart and move most of these numbers to the caption?

28. You've said this on the previous page.

29. Is this referring to 2000 or 1999?

30. You've already said this on the previous page. I'm moving it to this page as insert D.

31. This seems to suggest that the natural gas section should precede the oil section.

32. You've just listed these products on the previous page.

33. Should this be singular?

34. Here's a case where I don't think we need to insert both tcf and %. I think I prefer %.

35. This information assumes that readers will understand why the U.S. chooses to export energy that it will ultimately need. Perhaps this is covered in the supply and demand overview (which I haven't yet incorporated into this section yet). If not, I think we should explain the rationale for such exports.

36. This information is covered in the first paragraph of the previous page. You may want to substitute some of these words for some of those, but we want to avoid saying the same thing twice in such short sequence.

37. This information seems rather old at this point and very obvious. I suggest dropping it.

38. Is this long-term challenge less significant than the one in the previous paragraph? Referring to them both in this manner will dilute their significance to the reader.

39. The California and New York problems have been made abundantly clear up front in the electricity section.

40. Should this be volatility instead?

41. This information seems somewhat redundant at this point.

3

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, March 29, 2001 2:53 PM
To: Anderson, Margot
Subject: Chapter 6 graphics

Margot:

I just looked at the folder you gave me and it is a presentation from Inja Paik for an IEA meeting in Bangkok. I bet that you gave me the wrong folder.

Charlie

20858

DOE021-1311

WHITE HOUSE 1 [illegible]

Williams, Ronald L

From: MaryBeth Zimmerman
Sent: Wednesday, March 21, 2001 9:43 AM
To: Anderson, Margot
Cc: Abe Haspel/EE/DOE@DOE%HQ-NOTES; Michael York/EE/DOE@DOE%HQ-NOTES
Subject: Re: FW: State's latest draft - chapter 10

---From: Charles_M._Smith@ovp.eop.gov%internet [mailto:Charles_M._Smith@ovp.eop.gov]Sent: Tuesday, March 20, 2001 6:57 PMTo: Kelliher, Joseph; Anderson, Margot;Julieanna_R._Glover@ovp.eop.gov%internet; Kmurphy@osec.doc.gov%internet;Dina.Ellis@do.treas.gov% internet;Sue_Ellen_Wooldridge@IOS.DOI.gov%internet;Joel_D._Kaplan@who.eop.gov%internet; Keith.Collins@USDA.gov%internet;Joseph.Glauber@USDA.gov%internet; Galloglysj@State.gov% internet;McManusmt@State.gov%internet; Michelle.Poche@OST.DOT.Gov% internet;Patricia.Stahlschmidt@FEMA.gov%internet; Brenner.Rob@EPA.gov% internet;Symons.Jeremy@EPA.gov%internet; Beale.John@EPA.gov%internet;MPeacock@omb.eop.gov%internet; Mark_A._Weatherly@omb.eop.gov%internet;Robert_C._McNally@opd.eop.gov%internet; Jhowardj@ceq.eop.gov%internet;William_bettenberg@IOS.DOI.gov%internet;Tom_fulton@IOS.DOI.gov% internet; Kjersten_drager@ovp.eop.gov%internet;Mleblanc@ceq.eop.gov%internet; Bruce.Baughman@FEMA.gov%internet;Charles.m.Hess@USACE.army.mil%internet; akeeler@cea.eop.gov% internet;commcoll@aol.com%internet; Karen_E._Keller@omb.eop.gov%internet;Carol_J. _Thompson@who.eop.gov%internet;Sandra_L._Via@omb.eop.gov%internet; Megan_D._Moran@ovp.eop.gov% internet;Janet_P._Walker@opd.eop.gov%internet;Ronald_L._Silberman@omb.eop.gov%internet;Lori_A. _Krauss@omb.eop.gov%internet;Andrew_D._Lundquist@ovp.eop.gov%internet;Karen_Y. _Knutson@ovp.eop.gov%internet;Charles_D._McGrath_Jr@ovp.eop.gov%internet;Robert_C.

20859

DOE021-1312

_McNally@oa.eop.gov%internet; Cesar_Conda@ovp.eop.gov%internet;Jennifer_H._Mayfield@ovp.eop.gov%internet;Mary_J._Matalin@ovp.eop.gov%internet;Nancy_P._Dorn@who.eop.gov%internet;Margaret_Bradley@IOS.DOI.gov%internet;Jean_M._Russell@opd.eop.gov%internetCc: kjersten_drager@ovp.eop.gov%internet;john_fenzel@ovp.eop.gov%internet;Andrew_D._Lundquist@ovp.eop.gov%internet;Karen_Y._Knutson@ovp.eop.gov%internetSubject: State's latest draftAttached is State's latest draft of their chapter.(See attached file: 03_14_01_NEPG Study EW_R1.doc)

20860

DOE021-1313

6 65

Williams, Ronald L

From:	Breed, William
Sent:	Wednesday, March 21, 2001 9:47 AM
To:	Anderson, Margot
Subject:	RE: State's latest draft - chapter 10

Bill

7 b5

Williams, Ronald L

From: Breed, William
Sent: Wednesday, March 21, 2001 11:44 AM
To: Anderson, Margot
Subject: RE: State's latest draft - chapter 10

mainly I want to keep informed, see the lay of the land as it develops, so I can better 'tune' what we do and say and think about down here – I realize it may not be very valuable to read every draft – Bill

—Original Message—
From: Anderson, Margot
Sent: Wednesday, March 21, 2001 11:18 AM
To: Breed, William
Subject: RE: State's latest draft - chapter 10

We have a lot of editing to do. Not sure yet how to pull you in. Stay tuned.

—Original Message—
From: Breed, William
Sent: Wednesday, March 21, 2001 9:47 AM
To: Anderson, Margot
Subject: RE: State's latest draft - chapter 10

Bill

20876

8

b5

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Wednesday, March 21, 2001 11:56 AM
To: Anderson, Margot
Subject: clean up of interim report

Margot:

Charlie

20877

DOE021-1330

4

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Wednesday, March 21, 2001 12:22 PM
To: Anderson, Margot
Subject: Re: DOI comments on graphics

PIC02450.PCX

Margot:

In the previous message I sent you I didn't attach the message below from Joan O'Callaghan - the Tech Editor - regarding graphics. What do you think?

---------- Forwarded by Charles M. Smith/OVP/EOP on 03/21/2001 12:20 PM ----------

(Embedded
image moved CommColl@aol.com
to file: 03/15/2001 08:45:56 PM
PIC02450.PCX)

Record Type: Record

To: Charles M. Smith/OVP/EOP

cc:
Subject: Re: DOI comments on graphics

10 WHITE HOUSE

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Wednesday, March 21, 2001 1:00 PM
To: Anderson, Margot
Subject: RE: DOI comments on graphics

Margot:

The attachment was the forwarded message from comcall@aol.com that dealt with additional graphics and perhaps moving some of them around. I'll send it again if needed.

Charlie

20880

DOE021-1333

11

WHITE House + b(5)

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Wednesday, March 21, 2001 2:19 PM
To: Anderson, Margot
Subject: comments on graphics

20881

DOE021-1334

14

WHITE HOUSE + b(5)

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Wednesday, March 21, 2001 2:39 PM
To: Anderson, Margot
Subject: Re: LIHEAP

20883

DOE021-1336

1 /

WHITE HOUSE + b(5)

Williams, Ronald L

From:	Wheeler, Evelyn [WheelerE@state.gov]
Sent:	Wednesday, March 21, 2001 4:34 PM
To:	Kelliher, Joseph; Anderson, Margot; Hudome, Randa; 'Andrew Lundquist, OVP'; 'Karen Knutson at OVP'; 'Charlie Smith, OVP'; 'John Fenzel, OVP'; 'Kjersten Drager, OVP'; 'Kevin Murphy, DOC'
Cc:	McManus, Matthew T; Gallogly, Stephen J
Subject:	NEPD - International Section

Evelyn Wheeler
EB/ESC/IEC/EPC - Room 3535
Phone: (202) 647-4557
Fax: (202) 647-4037
This message is unclassified under precepts of EO 12958.

WHITE HOUSE [illegible]

Williams, Ronald L

From:	Wheeler, Evelyn [WheelerE@state.gov]
Sent:	Wednesday, March 21, 2001 5:02 PM
To:	Kelliher, Joseph; Anderson, Margot; Hudome, Randa; 'Andrew Lundquist, OVP'; 'Karen Knutson at OVP'; 'Charlie Smith, OVP'; 'John Fenzel, OVP'; 'Kjersten Drager, OVP'; 'Kevin Murphy, DOC'
Cc:	McManus, Matthew T; Gallogly, Stephen J
Subject:	NEPD Deadline

We made a mistake in telling you in our prior e-mail that the Friday meeting is at 1:00 in the afternoon. It's at 10:00 in the a.m. So, the earlier you can get us your comments, the better. Thank you for all your help!

Evelyn Wheeler
EB/ESC/IEC/EPC - Room 3535
Phone: (202) 647-4557
Fax: (202) 647-4037
This message is unclassified under precepts of EO 12958.

16

WHITE HOUSE + RELEASE

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, March 22, 2001 8:07 AM
To: Anderson, Margot
Subject: RE: comments on graphics

Margot:

Embedded in the e-mail message, below the line that extends several inches, are the comments on the graphics. It is not an attachment. If need be, I'll fax the message over and circle it in ink.

Charlie

20900

DOE021-1353

11

WHITE HOUSE + RELEASE -
W WITHHOLD ATTACH. DUE TO (6)(5)

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, March 22, 2001 8:13 AM
To: Anderson, Margot
Subject: chapter 9

energyinfrastructure.doc

Margot:

This is an unupdated version of DOT's Chapter 9. I don't believe that it has been touched since 2/28/01. Michelle has been out sick for a couple of days. We're trying to get DOT's peer review scheduled so she (we) can move forward.

(See attached file: energyinfrastructure.doc)

20901

DOE021-1354

11

WHITE [illegible] + 6.5)

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, March 22, 2001 8:27 AM
To: Anderson, Margot
Subject: RE: comments on graphics

20907

DOE021-1360

WHITE HOUSE + RELATED ... PAGE CHANGES ... DRAFTS

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, March 22, 2001 8:29 AM
To: Kelliher, Joseph; Anderson, Margot; Kmurphy@osec.doc.gov%internet; Dina.Ellis@do.treas.gov%internet; Sue_Ellen_Wooldridge@IOS.DOI.gov%internet; Joel_D._Kaplan@who.eop.gov%internet; Keith.Collins@USDA.gov%internet; Joseph.Glauber@USDA.gov%internet; Galloglysj@State.gov%internet; McManusmt@State.gov%internet; Michelle.Poche@OST.DOT.Gov%internet; Patricia.Stahlschmidt@FEMA.gov%internet; Brenner.Rob@EPA.gov%internet; Symons.Jeremy@EPA.gov%internet; Beale.John@EPA.gov%internet; MPeacock@omb.eop.gov%internet; Mark_A._Weatherly@omb.eop.gov%internet; Robert_C._McNally@opd.eop.gov%internet; Jhowardj@ceq.eop.gov%internet; William_bettenberg@IOS.DOI.gov%internet; Tom_fulton@IOS.DOI.gov%internet; Mleblanc@ceq.eop.gov%internet; Bruce.Baughman@FEMA.gov%internet; Charles.m.Hess@USACE.army.mil%internet; akeeler@cea.eop.gov%internet; commcoll@aol.com%internet; Karen_E._Keller@omb.eop.gov%internet; Carol_J._Thompson@who.eop.gov%internet; Sandra_L._Via@omb.eop.gov%internet; Megan_D._Moran@ovp.eop.gov%internet; Janet_P._Walker@opd.eop.gov%internet; Ronald_L._Silberman@omb.eop.gov%internet; Lori_A._Krauss@omb.eop.gov%internet; Charles_D._McGrath_Jr@ovp.eop.gov%internet; Robert_C._McNally@oa.eop.gov%internet; Margaret_Bradley@IOS.DOI.gov%internet
Cc: Andrew_D._Lundquist@ovp.eop.gov%internet; Karen_Y._Knutson@ovp.eop.gov%internet; John_Fenzel@ovp.eop.gov%internet
Subject: Latest copies of draft chapters


env't chapter 3-9.wpd


ATTACHMENT.TXT


graphDC.PRZ


ATTACHMENT.TXT


Graph 2.ppt


ATTACHMENT.TXT


sec3.2.doc


Renewables Chapter Edited.DOC


sec8.doc


energyinfrastructure.doc


03_14_01_NEPG Study EW_R1.doc


NEP sec3 short 0321a.doc


sec6.1.doc

For your info, I've attached the latest chapters. If they're not the last, most current draft, please send them to me.

chapter 3 (See attached file: sec3.2.doc) chapter 7 (See attached file: Renewables Chapter Edited.DOC)

chapter 4

20908

DOE021-1361

21

WHITE House + (6) 5

Williams, Ronald L

From: Karen_Y._Knutson@ovp.eop.gov%internet [Karen_Y._Knutson@ovp.eop.gov]
Sent: Thursday, March 22, 2001 8:52 AM
To: Anderson, Margot
Subject: Re: help

20972

JV

WHITE HOUSE + RELATED - THIS PAGE ONLY WITHHOLD ATTACHMENT (b)5)

Williams, Ronald L

From: Karen_Y._Knutson@ovp.eop.gov%internet [Karen_Y._Knutson@ovp.eop.gov]
Sent: Thursday, March 22, 2001 8:52 AM
To: Anderson, Margot
Subject: Emergency Memo


ATTACHMENT.TXT


PIC04945.PCX

Forwarded by Karen Y. Knutson/OVP/EOP on 03/22/2001 08:51 AM

(Embedded
image moved Frank Bishop <bishopf@erols.com>
to file: 03/12/2001 08:45:49 AM
PIC04945.PCX)

Please respond to bishopf@erols.com

Record Type: Record

To: Karen Y. Knutson/OVP/EOP

cc: Jeff Genzer <jcg@dwmpdc.com>, David Terry <dsterry@erols.com>
Subject: Emergency Memo

20973

55

(6) 5

To: Karen Knutson
From: Frank Bishop
Subject: Energy Emergencies and Impacts in the States
Date: March 10, 2001
CC: Jeff Genzer; David Terry

In general, our experiences over the past two years have pointed to the increasing interrelationship among various fuel supplies and electricity. With strained infrastructure, sustained higher crude oil prices, and other market and regulatory factors, we are in a situation that appears to have some regions of the nation moving from one energy price spike, infrastructure challenge, and supply emergency to the next.

The State and Territory Energy Offices and the National Association of State Energy Officials (NASEO) have been involved in energy security and emergency response since our founding and are pleased to provide our observations and a some examples of the current energy crisis. Many of the comments that follow are the result of e-mails from State and Territory Energy Offices that were gathered on Friday, March 9, 2001, by NASEO.

Do We Have an Emergency?
There is consensus that there is an emergency in the sense that consumers and businesses are being severely impacted by high energy prices, and in the sense that each heating, driving, or cooling season seems to bring with it a serious price spike or tightness in supply. We have found that in some cases a single pipeline, refinery, storage facility, or power plant outage can cause a true energy emergency in a state or region.

Events over the past three months ranged from propane price spikes in the Midwest and South, to dramatically higher natural gas prices that continue to strain the budgets of consumers and small business, to ongoing electricity problems in the West, to narrowly avoiding serious heating oil problems in the Northeast. There have also been localized emergencies such as Las Vegas coming within hours of running out of diesel and jet fuel due to pipeline outages. These events have seriously strained resources in many State Energy Offices and have impacted much of the nation. Moreover, we have higher gasoline and natural gas prices on the horizon for this summer, and the real potential for electricity outages in parts of the West, Midwest, and Northeast.

We also have an emergency in the sense that the economic impact of energy price volatility over the past year has caused pain not only among low-income families, middle-income families, and small business, but also among larger corporations and state and local government operations. For example, there are school districts from Mississippi to Virginia to Maine to California that are struggling to pay higher natural gas and electric bills. State Energy Offices have worked to improve the efficiency of these facilities and lower their energy costs for a number of years. While efficiency improvements are paying off for those institutions that acted, many schools are struggling to learn how to make changes in the way they use energy, while simultaneously facing the challenges of educating students.

NASEO's Energy Data and Security Committee has drafted a number of recommendations over the past two years requesting the Federal Government's assistance and attention in the matter of energy security and state energy emergency response and mitigation, as well as the need to address the infrastructure, supply, and demand issues before the nation. A few of those documents are attached and we would be pleased to discuss them with you.
In addition, we have assembled a "quick" sampling from the State and Territory Energy Offices. There responses were gathered on Friday afternoon, March 9, 2001, in response to two questions:

1) is their an energy emergency; and 2) are there examples that indicate that uncertainty in the energy markets is causing economic problems.

In general, Midwestern states, like much of the nation, are feeling the crunch of higher energy prices, in particular natural gas, propane, and gasoline. Many of these states had true supply and price emergency situations in December and January with regard to propane. And a number of states are anticipating gasoline price spikes this summer. Energy experts from both the U.S. Department of Energy and the private sector indicate that $2.00 per gallon gasoline may well be on the way again this summer for areas such as Chicago.

Illinois

In Illinois, like the rest of the Midwest, consumers are reeling from high heating costs. The governor took action creating an "energy cabinet" charged with coordinating key energy-related issues. The governor said, "recent developments and volatility in the energy market experienced by the citizens of this state and nationally demonstrate an immediate need to create a framework for handling energy-related issues . . . . The very serious impact of high natural gas prices on the Illinois consumer deserves a strong and coordinated response form my Administration."

The state is taking steps including increased assistance for low-income households, to the extent possible and promoting increased efficiency measures for homes and businesses. The energy office also reports that skyrocketing energy costs are hurting apartment landlords, who in turn are forced to pass much of the increased costs on to tenants in the form of higher rents. Farmers are also feeling the pinch with a combination of low commodity prices, high fuel costs, and dramatically higher fertilizer costs. A bright spot for Illinois farmers is ethanol, where the Governor proposed $2 million for new alternative-fuels incentive program, and the Illinois house passed a measure banning MTBE, further strengthening the demand for ethanol.

The state is now preparing for a potential repeat of last summer's gasoline crisis which delivered prices averaging more than $2 per gallon in Chicago—higher than any other major U.S. city. Meanwhile, a key local refinery is closing. A representative for the Blue Island refinery stated that, "The closing was based on economic factors, particularly the high cost of upgrading the plant to meet government mandates for cleaner-burning gasoline." It is unclear, however, if shutting down the 80,000 barrel-per-day operation will affect oil supplies or prices in the Chicago area.

Iowa

Increased energy prices affect on agriculture is only beginning to fully develop as spring approaches. It is expected that farmers will feel the pain of not only relatively high fuel costs, but also fertilizer costs that are currently $370/ton (22.6 cents/pound) vs. 1999 of $190/ton (11.6 cents/pound). The Iowa Energy Office's agriculture energy efficiency initiatives will be of some assistance to farmers in mitigating these price increases.

Missouri

If "emergency" means citizens are doing without power, heat, or air conditioning causing a threat to public health and welfare, Missouri is not currently in an energy emergency. There are examples, however, of recurring energy price and supply volatility. This past summer we experienced high gasoline and diesel prices primarily due to short supplies and high crude oil prices, high consumer demand, low inventories and supply disruptions that included pipeline breaks. Some of these same factors played a role in our heating fuel supplies and prices this winter. Missouri natural gas and propane consumers saw increases of 40 to 50 percent in their

heating bills from last winter. Following are a few examples of the situations we have experienced last summer and this winter:

- Between 1997 and June 2000, fuel costs per farm have increased 24.5%; and between January 2000 and June 2000, fuel costs per farm have increased 14.77%. Based on June 2000 prices, average farm fuel expenditures will reach $3222.70 per farm per year and consume 19.64% of farm income.
- Gasoline expenditures account for roughly 37% of farm fuel costs. Between 1997 and June 2000, gasoline costs per farm have increased 26.25%; and between January 2000 and June 2000, gasoline costs per farm have increased 36.63%.
- Diesel expenditures account for roughly 63% of farm fuel costs. Between 1997 and June 2000, diesel costs per farm have increased 18.3%; and between January 2000 and June 2000, diesel costs per farm have increased 3.6%. Diesel prices peaked in February 2000, averaging $1997.38 per farm per year and consuming 12.17% of farm income. Small trucking companies were negatively impacted by the high diesel prices as well.
- This winter 2000-2001 heating costs have not yet been quantified. However, there were obviously adverse economic impacts on individual consumers and the economy from reduced consumer spending on other goods and services and higher business energy costs inhibiting business expansions and contributing to staff reductions in some cases. Emergency waivers from Federal Motor Carrier Safety Regulations were necessary to allow transporters of propane to deliver propane to residential and business customers in response to high demand and winter weather conditions.

Arkansas

The Arkansas Energy Office has received some reports of businesses struggling with energy costs. For example, one plant is temporarily laying off more than 50 workers with the company citing high operating (energy) costs as the reason.

Michigan

This week, Michigan consumers received notices in their March gas utility bills that April rates will increase by 40% - 60% as a result of a Public Service Commission-ordered rate freeze ending and the recent doubling and tripling of new supply costs. We anticipate that many Michigan consumers will contact their legislators and State Energy Office (SEP, WAP, LIHEAP) in large numbers for immediate assistance, and for aid in preparing for the next heating season. In Michigan, home heating is typically needed until late May-early June. The next heating season will begin in September-October. As in many state, "shut-off" moratoriums will end and consumers who could not pay natural gas bill will have service terminated in April.

On the Michigan propane situation, the state reported the following on January 25, 2001: The retail price of residential propane in Michigan reached a new record high of $1.793 a gallon on Monday, January 22, 2001 . . . . The high cost of natural gas has pushed propane prices upward. The production of propane from natural gas liquids has been falling because of very high natural gas prices, and some users have switched from natural gas to propane. Inventories of propane fell 2.1 million barrels in on January 19, 2001,15.7% below year ago levels.

The energy emergency in the **West** is well documented. Some good examples of the current situation and how it is impacting citizens and government follow.

Washington

Going forward, the drought emergency in the Northwest is exacerbating an already shaky energy picture due to low water. What will compound the problem is the dysfunctional wholesale market that is not entirely California's fault. The market, without the obligation to serve, and going forward, without the "share the shortage" agreements that were in place prior to the developments of the wholesale markets, will not respond to this low water energy supply problem without maximizing their own return. Data sharing to determine the extent of the crisis is difficult at best, if not impossible in some situations. And, certainly the ability to take the data and develop an effective response to help us all pull through is now fraught with conflicts.

In addition, we now have up to 250 MW of small diesel generators running throughout the state, which is the only legitimate response that many of our utilities and business consumers have available to them, leading to negative environmental impacts. We anticipate extreme prices this summer and maybe well into next winter, compounded by another winter of volatile natural gas prices and supplies, perhaps beyond what we have already seen in both cases in response to a critical water year.

The resulting cash and credit crises will negatively impact some of our utilities and in may cases our cities that operate those utilities, for years to come. In Washington, the state believes that there must be a response from the Federal Government requiring soft caps and delegating "must run" authority where necessary to ensure the reliability and economic stability of the grid. There are a number of examples of what the above situation has meant for Washington's businesses and workers. The following description of one plant closing serves to illustrate the point:

- A major paper plant is being closed in Washington resulting in the layoff of 800 employees. The company citing the increased cost of electricity. The unit of electricity that they were paying $35 for, is now $400.

Colorado

Colorado has also seen significantly higher natural gas prices. A good example of how small businesses are being impacted is the potential closing of a small dye company. Soaring natural gas prices there threaten to close the firm where costs are up 169 percent in one year.
In a race against time to install new energy-efficient equipment, the firm hopes they will be able to save the business. Skyrocketing energy costs could spell the end of Rocky Mountain Dyeing & Finishing Inc. The local paper quoted the owner saying, "How do you sit down for the year and anticipate a 300 percent increase in gas prices?" The company's natural gas bills have gone from $3,900 for December 1999 to $10,475 in December 2000. Officials in state agencies, the Legislature, local chambers of commerce and business associations all . . . agree that the cost of energy is rapidly becoming a major issue in the business community.

Oregon

Oregon has an electricity emergency with a tenuous balance between electricity demand and load resources because we are operating the Columbia River hydro system in "exception mode" which means we are sacrificing salmon in favor of power production. Even so the slightest "burp" in the system; a cold snap, downed power line, bad storm, etc. could cause a black out. A regional intra-state electricity emergency response group has ordered at least three emergencies this winter. And on more than one occasion the governors of Oregon and Washington have been forced to order mandatory energy use reductions by state agencies. Extraordinary energy conservation efforts have been initiated by the State Energy Offices and others to soften the affects of a record drought and likely hydropower interruptions this summer. It is well known that several aluminum smelters have shut down to create 2000 MW of electricity for use elsewhere.

Less known, is that primary metals manufacturing has been drastically affected by high electricity prices and resource availability. ORMET, a major rare metals producer has experienced down time as a result. And the Bonneville Power Administration is paying farmers not to grow irrigable crops in order to save water and the electricity used in irrigation pumping.

Idaho

The West Coast electricity supply situation is "impacting us all" the Idaho Energy Office reports. Higher wholesale prices have caused our largest regulated utility to request rate increases that would cause a 24.3% increase to residential customers, 32.8% increase to irrigation customers, 19.9% increase to small commercial customers, 34.7% to large commercial customers, and a 44.5% increase to industrial customers. Wholesale power purchase costs have increased such that purchases in December and January exceeded the cumulative cost of purchases for the preceding eight months (this is approximate but fairly close). The rate increase could go into effect in the next 30 days.

Additionally, Idaho utilities are offering to pay their irrigation customers to not farm portions of their fields to reduce electricity demand and make that saved power available for other local customers. It is also important to note that our hydro system (and much of the Northwest for that matter) is experiencing significantly reduced projected summer flows for hydro generation due to low snow pack and hence low water in the river systems. Idaho is likely in one of the ten "driest" years on record.

Regarding natural gas, several factors have caused local prices to increase on the order of 27% or more, depending on location and customer class.

California

Companies have had to shut down because of high natural gas prices, affecting a variety of firms ranging from paper production to greenhouses. Rolling blackouts have created public health and safety problems, as well as economic problems. Many businesses had their supply of electricity interrupted due to their participation in a voluntary interruptible program, which caused far more interruptions than anyone ever anticipated. This has created economic consequences on the businesses that have been interrupted so often. Some generators have shut down because PG&E has not been able to pay their bills for the power sold to them. And production at manufacturing plants has been interrupted due to rolling blackouts, which has damaged and/or ruined products.

Moreover, local governments and school districts are having a difficult time paying higher energy bills. Operating power plants in the San Diego area have had to switch to more polluting fuels because of temporary shortages of natural gas. And electricity imports into California have been sharply reduced at times since many out of state generators have been reluctant to sell electricity to PG&E and Southern California Edison.

Wyoming

The state has seen major increases in the price of natural gas, even though Wyoming is a major net exporter of gas. The result of this is just beginning to become apparent as retail establishments begin to adjust the prices of their products to reflect their increased energy costs. On the electricity front, all of Wyoming is seeing some increases in electric power rates, even though the state is also net exporter of power. The worst hit area seems to be an island of load by itself, Cheyenne. Cheyenne is likely to experience a 200% increase in electricity rates effective April 2001. The utility has signed a long-term contract, believed to be for five years, in order to get a fixed rate for power. This huge increase in the electricity rate will affect residential through

industrial users, and will no doubt result in some defaults on power bill payments, as well as the potential closures of some small businesses.

New Mexico
The New Mexico Energy Office reports that Phelps Dodge mining company may have to idle or lay off up to 2,300 workers because of rising energy costs related to the electricity crisis in California. In this case, the company is buying electricity on the wholesale market, a somewhat unusual circumstance for a large company, rather than via protective long-term contracts. Nevertheless, the power crisis will dramatically affect the local economy and the lives of those 2,300 workers.

In the **Northeast and Mid-Atlantic** the heating oil crisis is largely over with winter coming to an end, though tens of thousands of families cannot pay their heating bills. The historically low heating oil stocks this winter that could have resulted in a true crisis was avoided primarily because of abnormally high imports from Europe. These imports were available largely due to warm weather in Europe and high prices in the Northeastern United States. However, high-energy costs are taking a toll on low-income and middle-income families, small business, and institutions, where increased energy efficiency measures and state/federal assistance may be their best near- and long-term answer.

Massachusetts
The state took innovative steps late last year to bolster heating oil reserves, which aided greatly during the winter draw down period. Currently, there is no energy emergency concern in Massachusetts. However, small businesses and low-income families continue to struggle with high-energy costs this heating season.

New York
The New York Energy Office and other state authorities have worked hard over the past two years to mitigate potential heating oil and electricity problems through good energy policies and considerable demand-side implementation measures. However, unforeseen increases in energy costs are affecting schools and local governments. The state reports that there are examples of similar strained operating budgets and budget deficits of institutional and municipal organizations.

New Hampshire
The indicators of an emergency were first recognized on January 21, 2001, when fuel dealers attempting to load trucks at the two terminals in Portsmouth, NH could not obtain fuel (a situation that has been corrected). The terminals were low in supply or out of fuel and there was no kerosene available. Kerosene heats many mobile homes in which many elderly and low-income citizens reside. The price spiked immediately from 59 cents a gallon to 1.79. Small business owners with one or two trucks reported long waits at the terminals or indicated having to travel to Maine or Boston to obtain product. Loggers and diesel truck drivers reported that the high prices for fuel were forcing them to park their trucks rather than to operate at a loss. This is expected to have an effect on the price of goods delivered and the price of wood products and a negative impact to the tourist industry, but there is no data as yet. One example of the impact of high-energy costs is the closure of the Claremont Foundry, in an economically depressed area of the state, which cited high utility operating costs.

Virginia
A good example of how high natural gas prices are affecting schools and institutions is at the College of William & Mary. The schools energy bills spiked 60% in the past several months, adding $ 1.1 million in costs. The school has a hiring freeze until June 30 to try to recover.

Mississippi
Mississippi reports that several school districts are reporting difficulty paying energy bills this winter. The State Energy Office is redoubling efforts to improve the efficiency of school buildings through training and technical assistance programs aimed at reducing energy costs and improving learning environments.

Puerto Rico
Puerto Rico reports the closure of Chevron Phillips Chemical Puerto Rico Inc. gasoline line. (effective 28 Feb.) which supplies 20% of the local gasoline market. The change in supply is of concern.

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begin:vcard
n:Bishop;Frank
tel;fax:703-299-6208
tel;work:703-299-8800
x-mozilla-html:FALSE
org:NASEO
version:2.1
email;internet:bishopf@erols.com
title:Executive Director
adr;quoted-printable:;;1414 Prince Street=0D=0ASuite
200;Alexandria;Virginia;22314;
x-mozilla-cpt:;26736
fn:Frank Bishop
end:vcard
```

WHITE HOUSE + RELEASE

Williams, Ronald L

From:	John_Fenzel@ovp.eop.gov%internet [John_Fenzel@ovp.eop.gov]
Sent:	Thursday, March 22, 2001 9:33 AM
To:	Kelliher, Joseph; Anderson, Margot; Juleanna_R._Glover@ovp.eop.gov%internet; Kmurphy@osec.doc.gov%internet; Dina.Ellis@do.treas.gov%internet; Sue_Ellen_Wooldridge@IOS.DOI.gov%internet; Joel_D._Kaplan@who.eop.gov%internet; Keith.Collins@USDA.gov%internet; Joseph.Glauber@USDA.gov%internet; Galloglysj@State.gov%internet; McManusmt@State.gov%internet; Michelle.Poche@OST.DOT.Gov%internet; Patricia.Stahlschmidt@FEMA.gov%internet; Brenner.Rob@EPA.gov%internet; Symons.Jeremy@EPA.gov%internet; Beale.John@EPA.gov%internet; MPeacock@omb.eop.gov%internet; Mark_A._Weatherly@omb.eop.gov%internet; Robert_C._McNally@opd.eop.gov%internet; Jhowardj@ceq.eop.gov%internet; William_bettenberg@IOS.DOI.gov%internet; Tom_fulton@IOS.DOI.gov%internet; Kjersten_drager@ovp.eop.gov%internet; Mleblanc@ceq.eop.gov%internet; Bruce.Baughman@FEMA.gov%internet; Charles.m.Hess@USACE.army.mil%internet; akeeler@cea.eop.gov%internet; commcoll@aol.com%internet; Karen_E._Keller@omb.eop.gov%internet; Carol_J._Thompson@who.eop.gov%internet; Sandra_L._Via@omb.eop.gov%internet; Megan_D._Moran@ovp.eop.gov%internet; Janet_P._Walker@opd.eop.gov%internet; Ronald_L._Silberman@omb.eop.gov%internet; Lori_A._Krauss@omb.eop.gov%internet
Cc:	Andrew_D._Lundquist@ovp.eop.gov%internet; Karen_Y._Knutson@ovp.eop.gov%internet; Charles_M._Smith@ovp.eop.gov%internet; Charles_D._McGrath_Jr@ovp.eop.gov%internet; Robert_C._McNally@oa.eop.gov%internet; Cesar_Conda@ovp.eop.gov%internet; Jennifer_H._Mayfield@ovp.eop.gov%internet; Mary_J._Matalin@ovp.eop.gov%internet; Nancy_P._Dorn@who.eop.gov%internet; Margaret_Bradley@IOS.DOI.gov%internet; Jean_M._Russell@opd.eop.gov%internet
Subject:	NEPD Working Group Meeting, Immediately Following PrincipalsMeeting, 3 April

Immediately following the National Energy Policy Development Group Principals Meeting (scheduled at 3:00pm on April 3d), we will convene an NEPD Working Group Meeting in Room 180 of the OEOB from 4:30 - 6:00pm.

Because of space constraints in the Vice President's Ceremonial Office, only one person may accompany NEPD Principals to the meeting at 3:00pm. Additional agency representatives may attend the working group meeting.

Many Thanks,

John Fenzel

20983

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Williams, Ronald L

From: KYDES, ANDY
Sent: Thursday, March 22, 2001 1:57 PM
To: Anderson, Margot
Subject: RE: Chapter 9

Andy

-----Original Message-----
From: Margot Anderson_at_HQ-EXCH at X400PO
Sent: Thursday, March 22, 2001 8:22 AM
To: Kydes, Andy; John Conti_at_HQ-EXCH at X400PO; Andrea Lockwood_at_HQ-EXCH at X400PO; William Breed_at_HQ-EXCH at X400PO; Michael Whatley_at_HQ-EXCH at X400PO; Douglas Carter_at_HQ-EXCH at X400PO; Jay Braitsch_at_HQ-EXCH at X400PO; Elena Melchert_at_HQ-EXCH at X400PO; TREVOR COOK_at_HQ-EXCH at X400PO; 'jkstier@bpa.gov'_at_internet at X400PO; Christopher Freitas_at_HQ-EXCH at X400PO; Abe Haspel_at_HQ-NOTES at X400PO; MaryBeth Zimmerman_at_HQ-NOTES at X400PO; Michael York_at_HQ-NOTES at X400PO
Cc: Joseph Kelliher_at_HQ-EXCH at X400PO
Subject: Chapter 9

All,

WHITE HOUSE + [illegible] DRAFTS

Williams, Ronald L

From:	Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent:	Thursday, March 22, 2001 11:15 AM
To:	Kelliher, Joseph; Anderson, Margot; Kmurphy@osec.doc.gov%internet; Dina.Ellis@do.treas.gov%internet; Sue_Ellen_Wooldridge@IOS.DOI.gov%internet; Joel_D._Kaplan@who.eop.gov%internet; Keith.Collins@USDA.gov%internet; Joseph.Glauber@USDA.gov%internet; Michelle.Poche@OST.DOT.Gov%internet; Patricia.Stahlschmidt@FEMA.gov%internet; Brenner.Rob@EPA.gov%internet; Symons.Jeremy@EPA.gov%internet; Beale.John@EPA.gov%internet; MPeacock@omb.eop.gov%internet; Mark_A._Weatherly@omb.eop.gov%internet; Robert_C._McNally@opd.eop.gov%internet; Jhowardj@ceq.eop.gov%internet; William_bettenberg@IOS.DOI.gov%internet; Tom_fulton@IOS.DOI.gov%internet; Mleblanc@ceq.eop.gov%internet; Bruce.Baughman@FEMA.gov%internet; Charles.m.Hess@USACE.army.mil%internet; akeeler@cea.eop.gov%internet; commcoll@aol.com%internet; Karen_E._Keller@omb.eop.gov%internet; Carol_J._Thompson@who.eop.gov%internet; Sandra_L._Via@omb.eop.gov%internet; Megan_D._Moran@ovp.eop.gov%internet; Janet_P._Walker@opd.eop.gov%internet; Ronald_L._Silberman@omb.eop.gov%internet; Lori_A._Krauss@omb.eop.gov%internet; Charles_D._McGrath_Jr@ovp.eop.gov%internet; Robert_C._McNally@oa.eop.gov%internet; Margaret_Bradley@IOS.DOI.gov%internet
Cc:	Andrew_D._Lundquist@ovp.eop.gov%internet; Karen_Y._Knutson@ovp.eop.gov%internet; John_Fenzel@ovp.eop.gov%internet
Subject:	New Chapter 10 - State Chapter

03_20_01_NEPG Study_R2.doc Attached

(See attached file: 03_20_01_NEPG Study_R2.doc)

20985

WHITE HOUSE + RELEASE REDACT

Williams, Ronald L

From: Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent: Thursday, March 22, 2001 12:01 PM
To: Anderson, Margot
Subject: Chapter 10

Margot:

B-5

21000

DOE021-1453

7.

Williams, Ronald L WHITE HOUSE + b(5) | (b)(5) ATTORNEY ...

From:	Charles_M._Smith@ovp.eop.gov%internet [Charles_M._Smith@ovp.eop.gov]
Sent:	Thursday, March 22, 2001 12:07 PM
To:	Kelliher, Joseph; Anderson, Margot; Kmurphy@osec.doc.gov%internet; Dina.Ellis@do.treas.gov%internet; Sue_Ellen_Wooldridge@IOS.DOI.gov%internet; Joel_D._Kaplan@who.eop.gov%internet; Keith.Collins@USDA.gov%internet; Joseph.Glauber@USDA.gov%internet; Galloglysj@State.gov%internet; McManusmt@State.gov%internet; Michelle.Poche@OST.DOT.Gov%internet; Patricia.Stahlschmidt@FEMA.gov%internet; Brenner.Rob@EPA.gov%internet; Symons.Jeremy@EPA.gov%internet; Beale.John@EPA.gov%internet; MPeacock@omb.eop.gov%internet; Mark_A._Weatherly@omb.eop.gov%internet; Robert_C._McNally@opd.eop.gov%internet; Jhowardj@ceq.eop.gov%internet; William_bettenberg@IOS.DOI.gov%internet; Tom_fulton@IOS.DOI.gov%internet; Mleblanc@ceq.eop.gov%internet; Bruce.Baughman@FEMA.gov%internet; Charles.m.Hess@USACE.army.mil%internet; akeeler@cea.eop.gov%internet; commcoll@aol.com%internet; Karen_E._Keller@omb.eop.gov%internet; Carol_J._Thompson@who.eop.gov%internet; Sandra_L._Via@omb.eop.gov%internet; Megan_D._Moran@ovp.eop.gov%internet; Janet_P._Walker@opd.eop.gov%internet; Ronald_L._Silberman@omb.eop.gov%internet; Lori_A._Krauss@omb.eop.gov%internet; Charles_D._McGrath_Jr@ovp.eop.gov%internet; Robert_C._McNally@oa.eop.gov%internet; Margaret_Bradley@IOS.DOI.gov%internet
Cc:	Andrew_D._Lundquist@ovp.eop.gov%internet; Karen_Y._Knutson@ovp.eop.gov%internet; John_Fenzel@ovp.eop.gov%internet
Subject:	Bush-Cheney Energy Initiatives

21001

DOE021-1454

4L WHITE HOUSE [illegible]

Williams, Ronald L

From:	John_Fenzel@ovp.eop.gov%internet [John_Fenzel@ovp.eop.gov]
Sent:	Thursday, March 22, 2001 5:29 PM
To:	Kelliher, Joseph; Anderson, Margot; Juleanna_R._Glover@ovp.eop.gov%internet; Kmurphy@osec.doc.gov%internet; Dina.Ellis@do.treas.gov%internet; Sue_Ellen_Wooldridge@IOS.DOI.gov%internet; Joel_D._Kaplan@who.eop.gov%internet; Keith.Collins@USDA.gov%internet; Joseph.Glauber@USDA.gov%internet; Galloglysj@State.gov%internet; McManusmt@State.gov%internet; Michelle.Poche@OST.DOT.Gov%internet; Patricia.Stahlschmidt@FEMA.gov%internet; Brenner.Rob@EPA.gov%internet; Symons.Jeremy@EPA.gov%internet; Beale.John@EPA.gov%internet; MPeacock@omb.eop.gov%internet; Mark_A._Weatherly@omb.eop.gov%internet; Robert_C._McNally@opd.eop.gov%internet; Jhowardj@ceq.eop.gov%internet; William_bettenberg@IOS.DOI.gov%internet; Tom_fulton@IOS.DOI.gov%internet; Kjersten_drager@ovp.eop.gov%internet; Mleblanc@ceq.eop.gov%internet; Bruce.Baughman@FEMA.gov%internet; Charles.m.Hess@USACE.army.mil%internet; akeeler@cea.eop.gov%internet; commcoll@aol.com%internet; Karen_E._Keller@omb.eop.gov%internet; Carol_J._Thompson@who.eop.gov%internet; Sandra_L._Via@omb.eop.gov%internet; Megan_D._Moran@ovp.eop.gov%internet; Janet_P._Walker@opd.eop.gov%internet; Ronald_L._Silberman@omb.eop.gov%internet; Lori_A._Krauss@omb.eop.gov%internet; WheelerE@State.gov%internet
Cc:	Andrew_D._Lundquist@ovp.eop.gov%internet; Karen_Y._Knutson@ovp.eop.gov%internet; Charles_M._Smith@ovp.eop.gov%internet; Margaret_Bradley@IOS.DOI.gov%internet; Jean_M._Russell@opd.eop.gov%internet
Subject:	Agenda for NEPD Working Group Meeting Tomorrow, 10am, Truman Room , White House Conference Center

Here is the agenda for tomorrow's NEPD Working Group Meeting. As a reminder, it will be held in the Truman Room of the White House Conference Center (located on Jackson Place). Please note that agency representatives will be delivering a short summary of the recommendations they are considering for their chapters of the report.

Many Thanks,

John Fenzel

AGENDA

Review of March 19th Meeting with the President

Review Production Timeline

Review Recommendations for Chapters (2-5 Minutes each)

Chapter 3: Joe Kelliher
Chapter 4: Jerry Symons
Chapter 5: Dina Ellis
Chapter 6: Joe Kelliher
Chapter 7: Joe Kelliher
Chapter 8: Joe Kelliher
Chapter 9: Michelle Poche
Chapter 10: Steve Gallogly
Interior: Bill Bettenberg
Agriculture: Keith Collins

Review Status of Photos, Graphics, and Anecdotes

21004

DOE021-1457

Review of Rollout Plans

Next Scheduled Meetings:

March 28th, 11:00am: NEPD Working Group Meeting (Room 180, OEOB Tentative)
April 3d, 3:00-4:30pm: NEPD Principals Meeting (Vice President's Ceremonial Office)
April 3d, 4:30-6:00pm: NEPD Working Group Meeting (Now Scheduled in Ceremonial Office)

21005

DOE021-1458

47

(b)5 THIS PAGE + ATTACHMENT

Williams, Ronald L

From: Ball, Crystal A - KN-DC [caball@bpa.gov]
Sent: Thursday, March 22, 2001 6:18 PM
To: Anderson, Margot; Carrier, Paul
Cc: Stier, Jeffrey K - KN-DC; Seifert, Roger - KN-DC
Subject: BPA DSI information

Attached is the one-

21006

DOE021-1459