Attachment M

AEO 2003 Coal Supply Labor Productivity and Transportation Escalator Assumptions Used in v2.1.6

Table M1 shows the labor productivity assumptions underlying the coal supply curves in *Annual Energy Outlook 2003*. To provide greater consistency between the v.2.1.6 and the *AEO 2003* coal supply curves, the regional coal supply curves in v.2.1.6 were adjusted to reflect the percentage change in labor productivity assumed in *AEO 2003*. This involved first matching up the AEO and IPM coal supply regions. Then, for each coal supply region a calculation was made of the percentage change in labor productivity between model run years used in v.2.1.6 (i.e., 2005 to 2010, 2010 to 2015, and 2015 to 2020). Finally, the calculated percentage changes in labor productivity were incorporated into the v.2.1.6 coal supply curves for each region.

Table M2 shows the year-to-year change in coal transportation cost rates assumed in *AEO 2003*. To provide greater consistency between the v.2.1.6 and the *AEO 2003* coal transportation cost assumptions, the coal transportation cost escalation rates in v.2.1.6 were made consistent with those assumed in *AEO 2003*. As a result, the percentage changes in coal transportation cost rates between v.2.1.6 model run years (i.e., 2005 to 2010, 2010 to 2015, and 2015 to 2020) correspond to the changes in *AEO 2003* as shown in Table M2.

Table M1. LABOR PRODUCTIVITY (Short Tons per Miner Hour)

NEMS run aeo2003.d110502c

Coal Market Module Region	States	Data 2000	Preliminary Data 2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Northern Appalachia (NA)	PA, OH, MD, WV (North)	4.29	4.21	4.22	4.33	4.43	4.52	4.61	4.70	4.76	4.84	4.91	4.97	5.01	5.05	5.10	5.13
Central Appalachia (CA)	WV (South), KY (East), VA	4.17	3.83	3.96	4.02	4.10	4.18	4.24	4.29	4.34	4.38	4.43	4.45	4.46	4.47	4.47	4.48
Southern Appalachia (SA)	AL, TN	2.79	2.81	2.80	2.81	2.83	2.85	2.86	2.87	2.89	2.90	2.91	2.91	2.92	2.92	2.93	2.93
East Interior (EI)	IL, IN, KY (West), MS	4.72	4.73	4.77	4.80	4.88	4.99	5.06	5.12	5.21	5.26	5.34	5.39	5.48	5.53	5.60	5.68
West Interior (WI)	IA, MO, KS, AR, OK, TX (Bit)	3.58	3.94	3.94	3.92	3.91	3.90	3.89	3.89	3.89	3.89	3.89	3.89	3.89	3.90	3.90	3.89
Gulf Lignite (GL)	TX, LA	9.89	8.85	9.07	9.27	9.46	9.62	9.76	9.88	9.99	10.06	10.10	10.15	10.19	10.23	10.26	10.29
Dakota Lignite (DL)	ND, SD, MT (East)	17.64	17.07	17.43	17.74	18.03	18.28	18.50	18.70	18.89	19.06	19.21	19.35	19.46	19.56	19.66	19.73
Powder & Green River Basins (PG)	WY, MT (West)	35.86	37.30	38.24	39.12	39.94	40.70	40.95	41.54	42.09	42.61	43.09	43.32	43.32	43.32	43.29	43.29
Rocky Mountain (RM)	CO, UT	7.66	8.67	9.02	9.38	9.67	9.95	10.20	10.44	10.61	10.75	10.84	10.95	11.07	11.16	11.24	11.34
Southwest (ZN)	NM, AZ	8.01	7.92	8.08	8.27	8.32	8.38	8.39	8.46	8.51	8.55	8.55	8.61	8.62	8.64	8.67	8.67
Northwest (AW)	AK, WA	4.28	4.32	4.34	4.35	4.37	4.38	4.39	4.40	4.40	4.41	4.41	4.41	4.41	4.41	4.41	4.41
Appalachia (NA,CA,SA)		4.10	3.87	3.97	4.04	4.12	4.20	4.26	4.32	4.36	4.41	4.46	4.49	4.50	4.52	4.54	4.55
Interior (EI,WI,GL)		5.81	5.57	5.62	5.62	5.81	5.93	5.99	6.08	6.15	6.22	6.22	6.20	6.28	6.30	6.34	6.39
Northern Great Plains (DL,PG)		33.23	34.43	35.17	36.04	36.81	37.51	37.86	38.50	39.07	39.61	40.18	40.47	40.53	40.57	40.60	40.64
Other West (RM,ZN,AW)		7.44	7.93	8.15	8.43	8.60	8.77	8.92	9.09	9.17	9.28	9.32	9.43	9.56	9.63	9.69	9.78
East of the Mississippi River		4.19	4.00	4.10	4.17	4.25	4.34	4.41	4.46	4.51	4.56	4.61	4.64	4.67	4.69	4.72	4.74
West of the Mississippi River		17.67	18.34	19.26	19.61	19.78	20.01	20.42	20.94	21.51	21.94	22.82	23.33	23.41	23.63	23.90	24.02
Underground		4.17	4.03	4.20	4.35	4.46	4.58	4.68	4.76	4.80	4.87	4.94	5.02	5.11	5.15	5.20	5.26
Surface		11.05	10.64	10.65	10.80	11.04	11.10	11.30	11.63	11.94	12.30	12.78	13.10	13.37	13.43	13.60	13.69
U.S. Total/Average		7.02	6.85	7.08	7.20	7.39	7.49	7.62	7.80	7.99	8.20	8.47	8.66	8.82	8.87	8.96	9.03

Source: Energy Information Administration, Annual Energy Outlook 2003 (January 2003), Reference Case forecast, National Energy Modeling System run AEO2003.D110502C.

Table M1. LABOR PRODUCTIVITY (Short Tons per I

NEMS run aeo2003.d110502c

Coal Market Module Region	States	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	AVG ANN GRWTH 01-05	AVG ANN GRWTH 01-10	AVG ANN GRWTH 01-25
Northern Appalachia (NA)	PA, OH, MD, WV (North)	5.17	5.19	5.24	5.27	5.29	5.31	5.33	5.36	5.39	5.42	1.8%	1.7%	1.1%
Central Appalachia (CA)	WV (South), KY (East), VA	4.48	4.49	4.49	4.49	4.50	4.51	4.52	4.53	4.54	4.54	2.2%	1.6%	0.7%
Southern Appalachia (SA)	AL, TN	2.94	2.94	2.93	2.93	2.93	2.92	2.92	2.91	2.91	2.90	0.3%	0.4%	0.1%
East Interior (EI)	IL, IN, KY (West), MS	5.76	5.84	5.91	6.00	6.07	6.15	6.23	6.31	6.40	6.50	1.4%	1.4%	1.3%
West Interior (WI)	IA, MO, KS, AR, OK, TX (Bit)	3.89	3.88	3.89	3.88	3.87	3.86	3.85	3.85	3.84	3.83	-0.3%	-0.1%	-0.1%
Gulf Lignite (GL)	TX, LA	10.30	10.31	10.32	10.32	10.32	10.32	10.32	10.32	10.32	10.32	2.1%	1.5%	0.6%
Dakota Lignite (DL)	ND, SD, MT (East)	19.81	19.87	19.93	19.97	20.01	20.05	20.09	20.13	20.17	20.21	1.7%	1.3%	0.7%
Powder & Green River Basins (PG)	WY, MT (West)	43.30	43.31	43.34	43.38	43.45	43.52	43.55	43.59	43.62	43.62	2.2%	1.6%	0.7%
Rocky Mountain (RM)	CO, UT	11.41	11.50	11.56	11.66	11.75	11.81	11.86	11.93	11.98	12.04	3.5%	2.5%	1.4%
Southwest (ZN)	NM, AZ	8.68	8.69	8.68	8.69	8.69	8.69	8.69	8.69	8.69	8.69	1.4%	0.9%	0.4%
Northwest (AW)	AK, WA	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	4.41	0.3%	0.2%	0.1%
Appalachia (NA,CA,SA)		4.57	4.58	4.60	4.61	4.63	4.64	4.66	4.68	4.70	4.70	2.1%	1.6%	0.8%
Interior (EI,WI,GL)		6.48	6.54	6.60	6.64	6.71	6.76	6.82	6.88	6.94	7.03	1.6%	1.2%	1.0%
Northern Great Plains (DL,PG)		40.71	40.78	40.85	40.93	41.04	41.11	41.21	41.29	41.34	41.39	2.2%	1.7%	0.8%
Other West (RM,ZN,AW)		9.82	9.87	9.89	9.98	10.03	10.05	10.10	10.16	10.19	10.25	2.5%	1.8%	1.1%
East of the Mississippi River		4.78	4.80	4.83	4.85	4.87	4.90	4.93	4.96	4.99	5.01	2.1%	1.6%	0.9%
West of the Mississippi River		24.25	24.52	24.79	25.05	25.32	25.38	25.72	25.85	25.97	26.07	2.2%	2.5%	1.5%
Underground		5.31	5.35	5.40	5.46	5.50	5.56	5.61	5.67	5.72	5.74	3.3%	2.3%	1.5%
Surface		13.90	14.09	14.25	14.45	14.62	14.68	14.91	15.02	15.07	15.16	1.1%	2.1%	1.5%
U.S. Total/Average		9.16	9.28	9.37	9.48	9.60	9.68	9.82	9.91	9.95	9.97	2.2%	2.4%	1.6%

Source: Energy Information Administration, Annual Energy Outlook 2003 (Jan
National Energy Modeling System run AEO2003.D110502C.

Table M2. Transportation Rate Multipliers, 2001-2025
(2001=1.000)

year	Reference Case
2001	1.0000
2002	0.9914
2003	0.9783
2004	0.9622
2005	0.9661
2006	0.9609
2007	0.9526
2008	0.9455
2009	0.9376
2010	0.9304
2011	0.9241
2012	0.9134
2013	0.9014
2014	0.8892
2015	0.8739
2016	0.8587
2017	0.8440
2018	0.8282
2019	0.8127
2020	0.7954
2021	0.7864
2022	0.7773
2023	0.7673
2024	0.7577
2025	0.7487

Source: Energy Information Administration, Annual Energy Outlook 2003 (January 2003), Reference Case forecast, National Energy Modeling System run AEO2003.D110502C.