



Net-Zero America - National data

October 29, 2021 (updated November 17, 2023)

See the [Data Sheet Guide](#) for explanations of the contents of this document. The data herein underlie graphs and tables found in Princeton's Net-Zero America report:

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Table 1: *E+ scenario - IMPACTS - Health*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|--------|--------|--------|--------|-------|
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | | 1,506 | 1,040 | 725 | 645 | 388 | 155 |
| Premature deaths from air pollution - Mobile - On-Road (deaths) | | 11,515 | 10,889 | 8,385 | 4,910 | 2,254 | 876 |
| Premature deaths from air pollution - Gas Stations (deaths) | | 665 | 617 | 470 | 280 | 135 | 61.8 |
| Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | | 2,159 | 1,816 | 1,245 | 700 | 333 | 129 |
| Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | | 554 | 452 | 311 | 182 | 82.3 | 26.9 |
| Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | | 195 | 180 | 142 | 98.2 | 57.5 | 31.2 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 105 | 101 | 96 | 90.9 | 85.7 | 80.1 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 1,436 | 1,305 | 1,006 | 665 | 403 | 222 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 352 | 292 | 221 | 153 | 106 | 73.1 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 170 | 144 | 119 | 94.1 | 69.7 | 46.2 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 80.8 | 41.8 | 41 | 40 | 40.1 | 39.3 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 3,820 | 3,578 | 3,230 | 2,534 | 1,867 | 1,154 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 22,684 | 29.5 | 28.4 | 24.2 | 16.7 | 1.24 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 13,340 | 9,212 | 6,424 | 5,716 | 3,438 | 1,376 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 102,386 | 96,814 | 74,557 | 43,657 | 20,044 | 7,790 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 5,886 | 5,467 | 4,160 | 2,477 | 1,197 | 547 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 19,136 | 16,089 | 11,036 | 6,207 | 2,952 | 1,145 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 4,909 | 4,009 | 2,756 | 1,617 | 729 | 238 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 1,731 | 1,592 | 1,261 | 870 | 509 | 277 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 932 | 892 | 850 | 805 | 758 | 709 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 12,710 | 11,555 | 8,907 | 5,887 | 3,569 | 1,962 |

Table 1: *E+ scenario - IMPACTS - Health (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|--------|
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 3,117 | 2,585 | 1,954 | 1,351 | 939 | 647 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 1,502 | 1,275 | 1,054 | 833 | 617 | 409 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 713 | 369 | 362 | 353 | 353 | 347 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 33,918 | 31,775 | 28,681 | 22,506 | 16,582 | 10,246 |

Table 2: *E+ scenario - IMPACTS - Jobs*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| By economic sector - Agriculture (jobs) | | 31,616 | 38,522 | 43,996 | 38,634 | 36,139 | 47,266 |
| By economic sector - Construction (jobs) | | 573,592 | 725,512 | 924,334 | 1,031,838 | 1,126,536 | 1,367,955 |
| By economic sector - Manufacturing (jobs) | | 400,628 | 468,731 | 525,936 | 482,966 | 441,379 | 480,285 |
| By economic sector - Mining (jobs) | | 458,886 | 352,163 | 267,470 | 175,190 | 114,496 | 65,837 |
| By economic sector - Other (jobs) | | 55,515 | 80,434 | 117,990 | 146,101 | 175,036 | 240,097 |
| By economic sector - Pipeline (jobs) | | 46,153 | 47,909 | 40,500 | 29,005 | 22,744 | 20,678 |
| By economic sector - Professional (jobs) | | 326,519 | 391,584 | 504,671 | 591,429 | 679,866 | 854,663 |
| By economic sector - Trade (jobs) | | 296,685 | 310,110 | 357,184 | 384,484 | 422,475 | 521,131 |
| By economic sector - Utilities (jobs) | | 467,531 | 556,268 | 727,994 | 852,687 | 943,758 | 1,156,501 |
| By resource sector - Biomass (jobs) | | 83,448 | 93,313 | 109,174 | 106,831 | 133,053 | 206,231 |
| By resource sector - CO2 (jobs) | | 4,517 | 63,856 | 54,811 | 25,821 | 39,491 | 74,649 |
| By resource sector - Coal (jobs) | | 69,612 | 18,956 | 10,843 | 9,383 | 8,412 | 7,426 |
| By resource sector - Grid (jobs) | | 521,869 | 727,428 | 1,129,188 | 1,407,122 | 1,636,273 | 2,040,460 |
| By resource sector - Natural Gas (jobs) | | 560,896 | 449,993 | 363,389 | 321,219 | 224,534 | 157,167 |
| By resource sector - Nuclear (jobs) | | 49,013 | 46,209 | 41,201 | 35,097 | 32,879 | 52,468 |
| By resource sector - Oil (jobs) | | 790,088 | 693,932 | 596,616 | 431,490 | 318,938 | 201,943 |
| By resource sector - Solar (jobs) | | 361,297 | 503,931 | 674,877 | 738,614 | 815,882 | 1,087,098 |
| By resource sector - Wind (jobs) | | 216,386 | 373,616 | 529,976 | 656,757 | 752,968 | 926,971 |
| By education level - All sectors - High school diploma or less (jobs) | | 1,104,994 | 1,247,576 | 1,479,483 | 1,564,615 | 1,652,134 | 1,978,955 |
| By education level - All sectors - Associates degree or some college (jobs) | | 795,613 | 906,357 | 1,088,792 | 1,175,510 | 1,257,895 | 1,517,555 |
| By education level - All sectors - Bachelors degree (jobs) | | 592,885 | 639,550 | 734,577 | 770,267 | 813,551 | 969,404 |
| By education level - All sectors - Masters or professional degree (jobs) | | 142,942 | 155,085 | 180,573 | 192,967 | 207,155 | 249,827 |
| By education level - All sectors - Doctoral degree (jobs) | | 20,692 | 22,666 | 26,651 | 28,976 | 31,695 | 38,671 |
| By education level - Biomass sector - High school diploma or less (jobs) | | 47,969 | 54,390 | 62,467 | 57,137 | 63,198 | 93,676 |
| By education level - Biomass sector - Associates degree or some college (jobs) | | 15,986 | 17,669 | 21,356 | 22,114 | 29,865 | 47,668 |
| By education level - Biomass sector - Bachelors degree (jobs) | | 14,722 | 15,948 | 18,940 | 20,437 | 29,494 | 47,871 |
| By education level - Biomass sector - Masters or professional degree (jobs) | | 4,048 | 4,493 | 5,404 | 5,950 | 8,640 | 13,975 |
| By education level - Biomass sector - Doctoral degree (jobs) | | 722 | 813 | 1,007 | 1,194 | 1,857 | 3,040 |
| By education level - CO2 sector - High school diploma or less (jobs) | | 1,928 | 27,904 | 23,782 | 11,037 | 16,909 | 32,608 |
| By education level - CO2 sector - Associates degree or some college (jobs) | | 1,558 | 22,572 | 19,168 | 8,857 | 13,541 | 26,104 |

Table 2: E+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|---------|
| By education level - CO2 sector - Bachelors degree (jobs) | | 825 | 10,799 | 9,539 | 4,738 | 7,228 | 12,830 |
| By education level - CO2 sector - Masters or professional degree (jobs) | | 187 | 2,381 | 2,128 | 1,079 | 1,645 | 2,848 |
| By education level - CO2 sector - Doctoral degree (jobs) | | 18.6 | 201 | 194 | 110 | 168 | 259 |
| By education level - Coal sector - High school diploma or less (jobs) | | 30,308 | 8,917 | 5,756 | 4,901 | 4,320 | 3,747 |
| By education level - Coal sector - Associates degree or some college (jobs) | | 21,423 | 5,650 | 2,974 | 2,582 | 2,322 | 2,057 |
| By education level - Coal sector - Bachelors degree (jobs) | | 13,942 | 3,430 | 1,692 | 1,518 | 1,411 | 1,291 |
| By education level - Coal sector - Masters or professional degree (jobs) | | 3,429 | 835 | 370 | 334 | 313 | 288 |
| By education level - Coal sector - Doctoral degree (jobs) | | 511 | 123 | 51.5 | 48 | 46.1 | 43.4 |
| By education level - Grid sector - High school diploma or less (jobs) | | 221,521 | 310,236 | 483,828 | 605,692 | 707,528 | 886,253 |
| By education level - Grid sector - Associates degree or some college (jobs) | | 173,234 | 241,394 | 374,583 | 466,596 | 542,342 | 675,985 |
| By education level - Grid sector - Bachelors degree (jobs) | | 99,273 | 137,429 | 211,885 | 262,263 | 302,941 | 375,277 |
| By education level - Grid sector - Masters or professional degree (jobs) | | 24,980 | 34,473 | 52,987 | 65,386 | 75,302 | 93,006 |
| By education level - Grid sector - Doctoral degree (jobs) | | 2,862 | 3,896 | 5,905 | 7,186 | 8,160 | 9,939 |
| By education level - Natural gas sector - High school diploma or less (jobs) | | 220,352 | 177,991 | 144,372 | 127,389 | 89,118 | 62,586 |
| By education level - Natural gas sector - Associates degree or some college (jobs) | | 180,210 | 145,444 | 118,725 | 106,910 | 75,492 | 53,529 |
| By education level - Natural gas sector - Bachelors degree (jobs) | | 125,434 | 99,145 | 78,646 | 68,153 | 47,005 | 32,235 |
| By education level - Natural gas sector - Masters or professional degree (jobs) | | 30,731 | 24,150 | 19,086 | 16,571 | 11,420 | 7,815 |
| By education level - Natural gas sector - Doctoral degree (jobs) | | 4,168 | 3,263 | 2,560 | 2,196 | 1,499 | 1,002 |
| By education level - Nuclear sector - High school diploma or less (jobs) | | 16,613 | 15,708 | 14,046 | 11,998 | 11,271 | 18,034 |
| By education level - Nuclear sector - Associates degree or some college (jobs) | | 13,383 | 12,620 | 11,256 | 9,590 | 8,986 | 14,344 |
| By education level - Nuclear sector - Bachelors degree (jobs) | | 14,467 | 13,610 | 12,109 | 10,293 | 9,623 | 15,325 |
| By education level - Nuclear sector - Masters or professional degree (jobs) | | 3,916 | 3,677 | 3,266 | 2,772 | 2,587 | 4,114 |
| By education level - Nuclear sector - Doctoral degree (jobs) | | 634 | 593 | 524 | 443 | 412 | 652 |
| By education level - Oil sector - High school diploma or less (jobs) | | 317,656 | 281,308 | 243,630 | 178,026 | 132,908 | 85,196 |
| By education level - Oil sector - Associates degree or some college (jobs) | | 205,517 | 181,086 | 156,220 | 113,377 | 84,105 | 53,454 |
| By education level - Oil sector - Bachelors degree (jobs) | | 211,988 | 183,998 | 156,434 | 111,473 | 81,174 | 50,468 |
| By education level - Oil sector - Masters or professional degree (jobs) | | 48,078 | 41,558 | 35,209 | 24,945 | 18,063 | 11,149 |
| By education level - Oil sector - Doctoral degree (jobs) | | 6,849 | 5,981 | 5,123 | 3,669 | 2,686 | 1,676 |
| By education level - Solar PV sector - High school diploma or less (jobs) | | 162,237 | 223,875 | 296,527 | 320,689 | 349,980 | 460,612 |
| By education level - Solar PV sector - Associates degree or some college (jobs) | | 115,752 | 161,585 | 216,673 | 237,518 | 262,792 | 350,763 |

Table 2: *E+ scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|-----------|-----------|-----------|-----------|-----------|
| By education level - Solar PV sector - Bachelors degree (jobs) | | 64,993 | 92,326 | 125,526 | 139,341 | 156,259 | 211,354 |
| By education level - Solar PV sector - Masters or professional degree (jobs) | | 15,589 | 22,274 | 30,769 | 34,883 | 39,757 | 54,582 |
| By education level - Solar PV sector - Doctoral degree (jobs) | | 2,726 | 3,870 | 5,384 | 6,184 | 7,095 | 9,787 |
| By education level - Wind sector - High school diploma or less (jobs) | | 86,410 | 147,246 | 205,075 | 247,746 | 276,902 | 336,242 |
| By education level - Wind sector - Associates degree or some college (jobs) | | 68,549 | 118,337 | 167,838 | 207,967 | 238,449 | 293,651 |
| By education level - Wind sector - Bachelors degree (jobs) | | 47,242 | 82,864 | 119,806 | 152,051 | 178,416 | 222,754 |
| By education level - Wind sector - Masters or professional degree (jobs) | | 11,985 | 21,243 | 31,355 | 41,046 | 49,429 | 62,052 |
| By education level - Wind sector - Doctoral degree (jobs) | | 2,200 | 3,927 | 5,902 | 7,946 | 9,772 | 12,272 |
| Related work experience - All sectors - None (jobs) | | 377,180 | 425,010 | 505,022 | 539,026 | 573,455 | 690,259 |
| Related work experience - All sectors - Up to 1 year (jobs) | | 522,250 | 591,067 | 703,319 | 745,593 | 790,669 | 954,556 |
| Related work experience - All sectors - 1 to 4 years (jobs) | | 970,443 | 1,077,663 | 1,267,971 | 1,347,222 | 1,430,028 | 1,711,541 |
| Related work experience - All sectors - 4 to 10 years (jobs) | | 618,746 | 691,104 | 816,160 | 871,281 | 926,833 | 1,110,458 |
| Related work experience - All sectors - Over 10 years (jobs) | | 168,507 | 186,389 | 217,602 | 229,212 | 241,446 | 287,599 |
| Related work experience - Biomass sector - None (jobs) | | 14,115 | 15,813 | 18,262 | 17,227 | 20,285 | 30,827 |
| Related work experience - Biomass sector - Up to 1 year (jobs) | | 27,797 | 30,938 | 35,014 | 31,422 | 34,666 | 52,391 |
| Related work experience - Biomass sector - 1 to 4 years (jobs) | | 24,915 | 28,344 | 34,009 | 35,192 | 46,257 | 71,775 |
| Related work experience - Biomass sector - 4 to 10 years (jobs) | | 13,033 | 14,336 | 17,291 | 18,283 | 25,407 | 40,776 |
| Related work experience - Biomass sector - Over 10 years (jobs) | | 3,589 | 3,882 | 4,597 | 4,707 | 6,438 | 10,462 |
| Related work experience - CO2 sector - None (jobs) | | 691 | 9,938 | 8,464 | 3,932 | 6,012 | 11,526 |
| Related work experience - CO2 sector - Up to 1 year (jobs) | | 808 | 11,516 | 9,888 | 4,649 | 7,127 | 13,574 |
| Related work experience - CO2 sector - 1 to 4 years (jobs) | | 1,623 | 22,754 | 19,583 | 9,276 | 14,177 | 26,608 |
| Related work experience - CO2 sector - 4 to 10 years (jobs) | | 1,115 | 15,808 | 13,544 | 6,363 | 9,727 | 18,419 |
| Related work experience - CO2 sector - Over 10 years (jobs) | | 279 | 3,841 | 3,332 | 1,602 | 2,448 | 4,521 |
| Related work experience - Coal sector - None (jobs) | | 9,454 | 2,500 | 1,349 | 1,167 | 1,046 | 923 |
| Related work experience - Coal sector - Up to 1 year (jobs) | | 14,320 | 4,221 | 2,746 | 2,355 | 2,091 | 1,829 |
| Related work experience - Coal sector - 1 to 4 years (jobs) | | 26,408 | 7,201 | 4,147 | 3,581 | 3,203 | 2,820 |
| Related work experience - Coal sector - 4 to 10 years (jobs) | | 15,512 | 3,989 | 2,039 | 1,786 | 1,621 | 1,448 |
| Related work experience - Coal sector - Over 10 years (jobs) | | 3,917 | 1,045 | 562 | 495 | 451 | 405 |
| Related work experience - Grid sector - None (jobs) | | 77,513 | 108,126 | 167,964 | 209,445 | 243,703 | 304,074 |
| Related work experience - Grid sector - Up to 1 year (jobs) | | 99,923 | 139,707 | 217,533 | 271,912 | 317,175 | 396,757 |

Table 2: E+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Related work experience - Grid sector - 1 to 4 years (jobs) | | 188,711 | 262,837 | 407,687 | 507,642 | 589,859 | 735,002 |
| Related work experience - Grid sector - 4 to 10 years (jobs) | | 123,669 | 172,120 | 266,779 | 331,940 | 385,411 | 479,884 |
| Related work experience - Grid sector - Over 10 years (jobs) | | 32,055 | 44,638 | 69,226 | 86,184 | 100,125 | 124,742 |
| Related work experience - Natural gas sector - None (jobs) | | 81,233 | 65,487 | 53,255 | 47,552 | 33,439 | 23,590 |
| Related work experience - Natural gas sector - Up to 1 year (jobs) | | 97,562 | 78,199 | 63,010 | 55,428 | 38,657 | 27,056 |
| Related work experience - Natural gas sector - 1 to 4 years (jobs) | | 206,984 | 165,949 | 133,846 | 118,069 | 82,427 | 57,537 |
| Related work experience - Natural gas sector - 4 to 10 years (jobs) | | 137,737 | 110,541 | 89,428 | 79,407 | 55,625 | 39,032 |
| Related work experience - Natural gas sector - Over 10 years (jobs) | | 37,380 | 29,816 | 23,850 | 20,763 | 14,387 | 9,952 |
| Related work experience - Nuclear sector - None (jobs) | | 6,178 | 5,831 | 5,204 | 4,438 | 4,161 | 6,648 |
| Related work experience - Nuclear sector - Up to 1 year (jobs) | | 9,019 | 8,509 | 7,591 | 6,470 | 6,065 | 9,685 |
| Related work experience - Nuclear sector - 1 to 4 years (jobs) | | 18,294 | 17,241 | 15,368 | 13,087 | 12,256 | 19,551 |
| Related work experience - Nuclear sector - 4 to 10 years (jobs) | | 11,868 | 11,183 | 9,966 | 8,485 | 7,944 | 12,671 |
| Related work experience - Nuclear sector - Over 10 years (jobs) | | 3,653 | 3,445 | 3,072 | 2,617 | 2,452 | 3,913 |
| Related work experience - Oil sector - None (jobs) | | 106,469 | 93,826 | 80,891 | 58,779 | 43,645 | 27,806 |
| Related work experience - Oil sector - Up to 1 year (jobs) | | 147,302 | 129,295 | 110,972 | 80,355 | 59,452 | 37,782 |
| Related work experience - Oil sector - 1 to 4 years (jobs) | | 301,085 | 264,533 | 227,574 | 164,533 | 121,573 | 76,878 |
| Related work experience - Oil sector - 4 to 10 years (jobs) | | 182,691 | 160,250 | 137,652 | 99,339 | 73,274 | 46,250 |
| Related work experience - Oil sector - Over 10 years (jobs) | | 52,541 | 46,027 | 39,527 | 28,483 | 20,992 | 13,227 |
| Related work experience - Solar PV sector - None (jobs) | | 52,067 | 72,685 | 97,635 | 107,322 | 119,000 | 159,182 |
| Related work experience - Solar PV sector - Up to 1 year (jobs) | | 80,805 | 112,063 | 149,124 | 162,047 | 177,730 | 235,093 |
| Related work experience - Solar PV sector - 1 to 4 years (jobs) | | 125,539 | 175,648 | 236,066 | 259,383 | 287,624 | 384,727 |
| Related work experience - Solar PV sector - 4 to 10 years (jobs) | | 81,724 | 113,907 | 152,581 | 167,103 | 184,620 | 246,004 |
| Related work experience - Solar PV sector - Over 10 years (jobs) | | 21,162 | 29,628 | 39,472 | 42,759 | 46,907 | 62,092 |
| Related work experience - Wind sector - None (jobs) | | 29,461 | 50,804 | 71,999 | 89,165 | 102,163 | 125,684 |
| Related work experience - Wind sector - Up to 1 year (jobs) | | 44,713 | 76,619 | 107,442 | 130,954 | 147,706 | 180,388 |
| Related work experience - Wind sector - 1 to 4 years (jobs) | | 76,885 | 133,155 | 189,692 | 236,459 | 272,652 | 336,643 |
| Related work experience - Wind sector - 4 to 10 years (jobs) | | 51,396 | 88,969 | 126,879 | 158,575 | 183,204 | 225,974 |
| Related work experience - Wind sector - Over 10 years (jobs) | | 13,930 | 24,069 | 33,964 | 41,603 | 47,244 | 58,282 |
| On-the-Job Training - All sectors - None (jobs) | | 148,543 | 163,805 | 191,393 | 202,212 | 214,794 | 259,020 |
| On-the-Job Training - All sectors - Up to 1 year (jobs) | | 1,779,857 | 1,977,042 | 2,321,833 | 2,452,480 | 2,594,281 | 3,107,995 |

Table 2: E+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|-----------|-----------|
| On-the-Job Training - All sectors - 1 to 4 years (jobs) | | 540,524 | 612,390 | 731,606 | 787,128 | 839,842 | 1,008,443 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 162,503 | 188,978 | 231,366 | 255,191 | 276,664 | 335,156 |
| On-the-Job Training - All sectors - Over 10 years (jobs) | | 25,698 | 29,019 | 33,877 | 35,323 | 36,849 | 43,798 |
| On-the-Job Training - Biomass sector - None (jobs) | | 5,212 | 5,588 | 6,391 | 6,163 | 7,872 | 12,541 |
| On-the-Job Training - Biomass sector - Up to 1 year (jobs) | | 66,316 | 74,326 | 86,112 | 82,895 | 100,811 | 154,923 |
| On-the-Job Training - Biomass sector - 1 to 4 years (jobs) | | 9,212 | 10,374 | 12,819 | 13,599 | 18,521 | 29,345 |
| On-the-Job Training - Biomass sector - 4 to 10 years (jobs) | | 2,109 | 2,385 | 3,105 | 3,464 | 4,955 | 7,973 |
| On-the-Job Training - Biomass sector - Over 10 years (jobs) | | 598 | 640 | 747 | 710 | 894 | 1,449 |
| On-the-Job Training - CO2 sector - None (jobs) | | 217 | 2,962 | 2,581 | 1,248 | 1,911 | 3,519 |
| On-the-Job Training - CO2 sector - Up to 1 year (jobs) | | 2,767 | 38,439 | 33,219 | 15,847 | 24,226 | 45,154 |
| On-the-Job Training - CO2 sector - 1 to 4 years (jobs) | | 1,091 | 15,833 | 13,446 | 6,211 | 9,500 | 18,344 |
| On-the-Job Training - CO2 sector - 4 to 10 years (jobs) | | 398 | 5,980 | 5,013 | 2,256 | 3,455 | 6,872 |
| On-the-Job Training - CO2 sector - Over 10 years (jobs) | | 45 | 643 | 552 | 260 | 398 | 761 |
| On-the-Job Training - Coal sector - None (jobs) | | 3,439 | 897 | 504 | 443 | 403 | 361 |
| On-the-Job Training - Coal sector - Up to 1 year (jobs) | | 47,816 | 13,261 | 7,946 | 6,876 | 6,164 | 5,442 |
| On-the-Job Training - Coal sector - 1 to 4 years (jobs) | | 13,806 | 3,667 | 1,903 | 1,643 | 1,469 | 1,294 |
| On-the-Job Training - Coal sector - 4 to 10 years (jobs) | | 4,083 | 1,004 | 421 | 359 | 318 | 276 |
| On-the-Job Training - Coal sector - Over 10 years (jobs) | | 468 | 127 | 70.2 | 62.7 | 58 | 53 |
| On-the-Job Training - Grid sector - None (jobs) | | 25,540 | 35,551 | 55,113 | 68,592 | 79,668 | 99,235 |
| On-the-Job Training - Grid sector - Up to 1 year (jobs) | | 335,075 | 466,876 | 724,464 | 902,463 | 1,049,078 | 1,307,801 |
| On-the-Job Training - Grid sector - 1 to 4 years (jobs) | | 117,230 | 163,532 | 254,036 | 316,779 | 368,601 | 459,923 |
| On-the-Job Training - Grid sector - 4 to 10 years (jobs) | | 39,842 | 55,628 | 86,492 | 107,949 | 125,717 | 156,997 |
| On-the-Job Training - Grid sector - Over 10 years (jobs) | | 4,183 | 5,841 | 9,083 | 11,340 | 13,211 | 16,504 |
| On-the-Job Training - Natural gas sector - None (jobs) | | 29,256 | 23,161 | 18,408 | 15,980 | 11,043 | 7,637 |
| On-the-Job Training - Natural gas sector - Up to 1 year (jobs) | | 361,987 | 289,787 | 233,101 | 204,684 | 142,536 | 99,137 |
| On-the-Job Training - Natural gas sector - 1 to 4 years (jobs) | | 124,350 | 100,227 | 81,565 | 72,994 | 51,383 | 36,361 |
| On-the-Job Training - Natural gas sector - 4 to 10 years (jobs) | | 39,977 | 32,555 | 26,896 | 24,586 | 17,510 | 12,595 |
| On-the-Job Training - Natural gas sector - Over 10 years (jobs) | | 5,326 | 4,263 | 3,418 | 2,974 | 2,062 | 1,437 |
| On-the-Job Training - Nuclear sector - None (jobs) | | 3,292 | 3,102 | 2,765 | 2,354 | 2,205 | 3,517 |
| On-the-Job Training - Nuclear sector - Up to 1 year (jobs) | | 33,433 | 31,509 | 28,084 | 23,914 | 22,395 | 35,726 |

Table 2: E+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) | | 9,489 | 8,956 | 7,994 | 6,816 | 6,392 | 10,211 |
| On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) | | 2,289 | 2,160 | 1,928 | 1,645 | 1,542 | 2,465 |
| On-the-Job Training - Nuclear sector - Over 10 years (jobs) | | 510 | 482 | 430 | 367 | 345 | 551 |
| On-the-Job Training - Oil sector - None (jobs) | | 48,070 | 41,572 | 35,156 | 25,044 | 18,229 | 11,385 |
| On-the-Job Training - Oil sector - Up to 1 year (jobs) | | 556,287 | 488,515 | 419,945 | 303,651 | 224,385 | 142,002 |
| On-the-Job Training - Oil sector - 1 to 4 years (jobs) | | 144,006 | 126,810 | 109,359 | 79,265 | 58,730 | 37,263 |
| On-the-Job Training - Oil sector - 4 to 10 years (jobs) | | 34,011 | 30,239 | 26,292 | 19,275 | 14,437 | 9,286 |
| On-the-Job Training - Oil sector - Over 10 years (jobs) | | 7,713 | 6,796 | 5,864 | 4,255 | 3,156 | 2,007 |
| On-the-Job Training - Solar PV sector - None (jobs) | | 21,343 | 29,879 | 40,345 | 44,639 | 49,763 | 66,898 |
| On-the-Job Training - Solar PV sector - Up to 1 year (jobs) | | 232,935 | 326,586 | 438,039 | 479,286 | 530,091 | 707,380 |
| On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) | | 76,572 | 105,969 | 141,284 | 154,165 | 169,535 | 224,822 |
| On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) | | 26,069 | 35,481 | 47,323 | 52,118 | 57,439 | 76,245 |
| On-the-Job Training - Solar PV sector - Over 10 years (jobs) | | 4,378 | 6,016 | 7,886 | 8,406 | 9,054 | 11,753 |
| On-the-Job Training - Wind sector - None (jobs) | | 12,173 | 21,093 | 30,129 | 37,747 | 43,701 | 53,927 |
| On-the-Job Training - Wind sector - Up to 1 year (jobs) | | 143,241 | 247,744 | 350,923 | 432,864 | 494,595 | 610,432 |
| On-the-Job Training - Wind sector - 1 to 4 years (jobs) | | 44,768 | 77,022 | 109,201 | 135,657 | 155,711 | 190,881 |
| On-the-Job Training - Wind sector - 4 to 10 years (jobs) | | 13,725 | 23,546 | 33,897 | 43,539 | 51,291 | 62,447 |
| On-the-Job Training - Wind sector - Over 10 years (jobs) | | 2,478 | 4,212 | 5,825 | 6,949 | 7,671 | 9,284 |
| On-Site or In-Plant Training - All sectors - None (jobs) | | 428,512 | 480,068 | 567,032 | 603,891 | 642,770 | 774,173 |
| On-Site or In-Plant Training - All sectors - Up to 1 year (jobs) | | 1,613,069 | 1,792,003 | 2,105,853 | 2,225,758 | 2,354,914 | 2,821,150 |
| On-Site or In-Plant Training - All sectors - 1 to 4 years (jobs) | | 422,553 | 477,660 | 569,367 | 610,466 | 650,080 | 779,828 |
| On-Site or In-Plant Training - All sectors - 4 to 10 years (jobs) | | 172,076 | 197,117 | 238,022 | 259,657 | 279,624 | 336,892 |
| On-Site or In-Plant Training - All sectors - Over 10 years (jobs) | | 20,916 | 24,385 | 29,800 | 32,563 | 35,042 | 42,369 |
| On-Site or In-Plant Training - Biomass sector - None (jobs) | | 13,478 | 15,270 | 18,154 | 18,473 | 23,872 | 36,959 |
| On-Site or In-Plant Training - Biomass sector - Up to 1 year (jobs) | | 58,337 | 65,059 | 75,205 | 72,008 | 87,384 | 134,729 |
| On-Site or In-Plant Training - Biomass sector - 1 to 4 years (jobs) | | 8,420 | 9,462 | 11,465 | 11,778 | 15,479 | 24,303 |
| On-Site or In-Plant Training - Biomass sector - 4 to 10 years (jobs) | | 2,630 | 2,899 | 3,633 | 3,912 | 5,516 | 8,939 |
| On-Site or In-Plant Training - Biomass sector - Over 10 years (jobs) | | 584 | 624 | 716 | 660 | 802 | 1,299 |
| On-Site or In-Plant Training - CO2 sector - None (jobs) | | 696 | 9,738 | 8,397 | 3,989 | 6,102 | 11,439 |
| On-Site or In-Plant Training - CO2 sector - Up to 1 year (jobs) | | 2,554 | 35,610 | 30,731 | 14,621 | 22,355 | 41,790 |

Table 2: E+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|-----------|
| On-Site or In-Plant Training - CO2 sector - 1 to 4 years (jobs) | | 822 | 11,889 | 10,111 | 4,681 | 7,161 | 13,796 |
| On-Site or In-Plant Training - CO2 sector - 4 to 10 years (jobs) | | 398 | 5,916 | 4,982 | 2,263 | 3,464 | 6,818 |
| On-Site or In-Plant Training - CO2 sector - Over 10 years (jobs) | | 47.2 | 703 | 590 | 267 | 408 | 805 |
| On-Site or In-Plant Training - Coal sector - None (jobs) | | 10,259 | 2,664 | 1,410 | 1,245 | 1,139 | 1,026 |
| On-Site or In-Plant Training - Coal sector - Up to 1 year (jobs) | | 43,813 | 12,226 | 7,370 | 6,360 | 5,685 | 5,004 |
| On-Site or In-Plant Training - Coal sector - 1 to 4 years (jobs) | | 10,870 | 2,930 | 1,588 | 1,369 | 1,222 | 1,074 |
| On-Site or In-Plant Training - Coal sector - 4 to 10 years (jobs) | | 4,169 | 1,017 | 428 | 368 | 328 | 287 |
| On-Site or In-Plant Training - Coal sector - Over 10 years (jobs) | | 502 | 120 | 47.1 | 41.7 | 38.2 | 34.4 |
| On-Site or In-Plant Training - Grid sector - None (jobs) | | 79,472 | 110,527 | 171,194 | 212,870 | 247,010 | 307,382 |
| On-Site or In-Plant Training - Grid sector - Up to 1 year (jobs) | | 307,543 | 428,707 | 665,531 | 829,412 | 964,571 | 1,202,957 |
| On-Site or In-Plant Training - Grid sector - 1 to 4 years (jobs) | | 90,137 | 125,800 | 195,520 | 243,932 | 283,980 | 354,516 |
| On-Site or In-Plant Training - Grid sector - 4 to 10 years (jobs) | | 39,587 | 55,238 | 85,830 | 107,056 | 124,601 | 155,508 |
| On-Site or In-Plant Training - Grid sector - Over 10 years (jobs) | | 5,131 | 7,156 | 11,113 | 13,852 | 16,112 | 20,096 |
| On-Site or In-Plant Training - Natural gas sector - None (jobs) | | 89,308 | 71,273 | 57,315 | 50,611 | 35,322 | 24,690 |
| On-Site or In-Plant Training - Natural gas sector - Up to 1 year (jobs) | | 330,074 | 264,314 | 212,678 | 186,805 | 130,118 | 90,578 |
| On-Site or In-Plant Training - Natural gas sector - 1 to 4 years (jobs) | | 94,541 | 76,217 | 61,976 | 55,313 | 38,887 | 27,463 |
| On-Site or In-Plant Training - Natural gas sector - 4 to 10 years (jobs) | | 41,989 | 34,111 | 28,034 | 25,381 | 17,986 | 12,842 |
| On-Site or In-Plant Training - Natural gas sector - Over 10 years (jobs) | | 4,983 | 4,077 | 3,385 | 3,110 | 2,221 | 1,594 |
| On-Site or In-Plant Training - Nuclear sector - None (jobs) | | 8,773 | 8,263 | 7,360 | 6,264 | 5,863 | 9,347 |
| On-Site or In-Plant Training - Nuclear sector - Up to 1 year (jobs) | | 30,144 | 28,417 | 25,336 | 21,580 | 20,215 | 32,256 |
| On-Site or In-Plant Training - Nuclear sector - 1 to 4 years (jobs) | | 7,232 | 6,827 | 6,094 | 5,197 | 4,874 | 7,787 |
| On-Site or In-Plant Training - Nuclear sector - 4 to 10 years (jobs) | | 2,618 | 2,470 | 2,205 | 1,880 | 1,762 | 2,815 |
| On-Site or In-Plant Training - Nuclear sector - Over 10 years (jobs) | | 245 | 231 | 206 | 176 | 165 | 262 |
| On-Site or In-Plant Training - Oil sector - None (jobs) | | 127,218 | 110,889 | 94,600 | 67,873 | 49,768 | 31,263 |
| On-Site or In-Plant Training - Oil sector - Up to 1 year (jobs) | | 500,847 | 439,812 | 378,054 | 273,388 | 202,047 | 127,906 |
| On-Site or In-Plant Training - Oil sector - 1 to 4 years (jobs) | | 116,425 | 102,660 | 88,637 | 64,336 | 47,729 | 30,322 |
| On-Site or In-Plant Training - Oil sector - 4 to 10 years (jobs) | | 41,052 | 36,459 | 31,686 | 23,187 | 17,338 | 11,117 |
| On-Site or In-Plant Training - Oil sector - Over 10 years (jobs) | | 4,547 | 4,112 | 3,638 | 2,706 | 2,055 | 1,336 |
| On-Site or In-Plant Training - Solar PV sector - None (jobs) | | 61,606 | 86,167 | 115,699 | 126,958 | 140,610 | 187,838 |
| On-Site or In-Plant Training - Solar PV sector - Up to 1 year (jobs) | | 211,352 | 295,949 | 396,749 | 434,054 | 479,861 | 640,055 |

Table 2: *E+ scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| On-Site or In-Plant Training - Solar PV sector - 1 to 4 years (jobs) | | 59,633 | 82,607 | 110,136 | 120,119 | 132,086 | 175,165 |
| On-Site or In-Plant Training - Solar PV sector - 4 to 10 years (jobs) | | 25,642 | 34,970 | 46,636 | 51,296 | 56,508 | 74,983 |
| On-Site or In-Plant Training - Solar PV sector - Over 10 years (jobs) | | 3,063 | 4,237 | 5,657 | 6,188 | 6,817 | 9,056 |
| On-Site or In-Plant Training - Wind sector - None (jobs) | | 37,702 | 65,276 | 92,903 | 115,609 | 133,085 | 164,229 |
| On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) | | 128,406 | 221,909 | 314,198 | 387,531 | 442,678 | 545,875 |
| On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | | 34,473 | 59,268 | 83,840 | 103,740 | 118,661 | 145,401 |
| On-Site or In-Plant Training - Wind sector - 4 to 10 years (jobs) | | 13,990 | 24,039 | 34,588 | 44,314 | 52,121 | 63,582 |
| On-Site or In-Plant Training - Wind sector - Over 10 years (jobs) | | 1,814 | 3,125 | 4,448 | 5,562 | 6,423 | 7,884 |
| Wage income - Biomass (million \$2019) | | 4,334 | 4,965 | 6,016 | 6,245 | 8,304 | 13,232 |
| Wage income - CO2 (million \$2019) | | 285 | 4,015 | 3,521 | 1,709 | 2,655 | 5,004 |
| Wage income - Coal (million \$2019) | | 4,212 | 1,122 | 603 | 531 | 484 | 434 |
| Wage income - Grid (million \$2019) | | 32,637 | 46,101 | 72,548 | 91,687 | 108,174 | 136,918 |
| Wage income - Natural Gas (million \$2019) | | 37,156 | 30,199 | 24,654 | 21,962 | 15,520 | 10,956 |
| Wage income - Nuclear (million \$2019) | | 3,504 | 3,382 | 3,089 | 2,697 | 2,591 | 4,243 |
| Wage income - Oil (million \$2019) | | 52,015 | 46,299 | 40,361 | 29,538 | 22,095 | 14,135 |
| Wage income - Solar (million \$2019) | | 20,346 | 28,771 | 39,161 | 43,645 | 49,103 | 66,690 |
| Wage income - Wind (million \$2019) | | 12,926 | 22,704 | 32,914 | 41,913 | 49,367 | 61,964 |

Table 3: *E+ scenario - IMPACTS - Capital Investments*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|-------|-------|-------|-------|-------|-------|
| Total Supply-Side Capital Committed - Cumulative from 2021 - Power Generation (billion \$2018) | 196 | 622 | 1,263 | 2,037 | 2,888 | 3,815 | 4,450 |
| Total Supply-Side Capital Committed - Cumulative from 2021 - Transmission (billion \$2018) | 107 | 309 | 611 | 1,013 | 1,537 | 2,205 | 2,357 |
| Total Supply-Side Capital Committed - Cumulative from 2021 - Distribution (billion \$2018) | 38.1 | 227 | 450 | 800 | 1,161 | 1,488 | 1,758 |
| Total Supply-Side Capital Committed - Cumulative from 2021 - Fuels Conversion (billion \$2018) | 5.18 | 28.2 | 103 | 218 | 400 | 742 | 910 |
| Total Supply-Side Capital Committed - Cumulative from 2021 - CO2 Transport & Storage (billion \$2018) | 0.853 | 108 | 142 | 163 | 182 | 226 | 241 |
| Total Supply-Side Capital Committed - Cumulative from 2021 - Industry (billion \$2018) | 0.741 | 46.6 | 94.9 | 138 | 163 | 186 | 187 |
| Total Supply-Side Capital Committed - Cumulative from 2021 - Total System (billion \$2018) | 348 | 1,332 | 2,631 | 4,329 | 6,309 | 8,641 | 9,904 |

Table 4: *E+ scenario - IMPACTS - Fossil fuel industries*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|--------|--------|--------|--------|-------|---------|
| Oil consumption - Annual (million bbls) | | 5,924 | 5,196 | 4,119 | 3,106 | 2,308 | 1,650 |
| Oil consumption - Cumulative (million bbls) | | | | | | | 126,839 |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 4,127 | 3,354 | 2,232 |
| Oil production - Cumulative (million bbls) | | | | | | | 136,632 |
| Natural gas consumption - Annual (tcf) | | 23,206 | 19,562 | 15,689 | 11,811 | 7,431 | 5,154 |

Table 4: E+ scenario - IMPACTS - Fossil fuel industries (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|---------|
| Natural gas consumption - Cumulative (tcf) | | | | | | | 472,555 |
| Natural gas production - Annual (tcf) | | 36,257 | 34,274 | 29,850 | 25,241 | 20,015 | 15,548 |
| Natural gas production - Cumulative (tcf) | | | | | | | 872,962 |

Table 5: E+ scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Final energy use - Transportation (PJ) | 27,996 | 26,390 | 23,464 | 19,872 | 16,608 | 14,565 | 13,649 |
| Final energy use - Residential (PJ) | 11,788 | 11,090 | 10,221 | 8,966 | 7,776 | 6,967 | 6,512 |
| Final energy use - Commercial (PJ) | 9,015 | 8,942 | 8,619 | 8,103 | 7,608 | 7,344 | 7,297 |
| Final energy use - Industry (PJ) | 25,107 | 26,056 | 26,110 | 25,372 | 25,108 | 24,870 | 24,572 |

Table 6: E+ scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Electricity distribution capital invested - Cumulative 5-yr (billion \$2018) | | 182 | 187 | 336 | 359 | 314 | 329 |

Table 7: E+ scenario - PILLAR 1: Efficiency/Electrification - Transportation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|---------|---------|---------|---------|---------|
| Vehicle sales - Light-duty - EV (%) | 4.41 | 16.7 | 48.7 | 82.7 | 96.4 | 99.3 | 100 |
| Vehicle sales - Light-duty - gasoline (%) | 89.1 | 76.3 | 46.4 | 15.6 | 3.17 | 0.586 | 0 |
| Vehicle sales - Light-duty - hybrid (%) | 4.91 | 4.89 | 3.38 | 1.24 | 0.304 | 0.067 | 0 |
| Vehicle sales - Light-duty - diesel (%) | 1.4 | 1.68 | 1.2 | 0.382 | 0.072 | 0.013 | 0 |
| Vehicle sales - Light-duty - hydrogen FC (%) | 0.11 | 0.331 | 0.191 | 0.059 | 0.012 | 0.002 | 0 |
| Vehicle sales - Light-duty - other (%) | 0.095 | 0.091 | 0.058 | 0.02 | 0.004 | 0.001 | 0 |
| Vehicle sales - Medium-duty - EV (%) | 0.784 | 5.07 | 25.3 | 60.8 | 76.5 | 79.5 | 80 |
| Vehicle sales - Medium-duty - gasoline (%) | 33.7 | 33.3 | 25.5 | 9.32 | 1.77 | 0.277 | 0 |
| Vehicle sales - Medium-duty - hybrid (%) | 0.363 | 0.402 | 0.341 | 0.14 | 0.03 | 0.005 | 0 |
| Vehicle sales - Medium-duty - diesel (%) | 64.7 | 59.7 | 42.3 | 14.4 | 2.59 | 0.384 | 0 |
| Vehicle sales - Medium-duty - hydrogen FC (%) | 0.196 | 1.27 | 6.33 | 15.2 | 19.1 | 19.9 | 20 |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.255 | 0.205 | 0.083 | 0.019 | 0.004 | 0 |
| Vehicle sales - Heavy-duty - diesel (%) | 97.2 | 92.1 | 67 | 23.3 | 4.22 | 0.628 | 0 |
| Vehicle sales - Heavy-duty - EV (%) | 0.588 | 3.81 | 19 | 45.6 | 57.4 | 59.6 | 60 |
| Vehicle sales - Heavy-duty - gasoline (%) | 0.227 | 0.227 | 0.176 | 0.066 | 0.013 | 0.002 | 0 |
| Vehicle sales - Heavy-duty - hybrid (%) | 0.082 | 0.09 | 0.077 | 0.031 | 0.007 | 0.001 | 0 |
| Vehicle sales - Heavy-duty - hydrogen FC (%) | 0.392 | 2.54 | 12.7 | 30.4 | 38.2 | 39.7 | 40 |
| Vehicle sales - Heavy-duty - other (%) | 1.5 | 1.23 | 1.07 | 0.568 | 0.163 | 0.038 | 0 |
| Light-duty vehicle capital costs vs. REF - Cumulative 5-yr (million \$2018) | | 51,477 | 133,974 | 213,805 | 325,180 | 352,492 | 336,852 |
| Public EV charging plugs - DC Fast (1000 units) | 14.4 | | 93.9 | | 391 | | 628 |
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 2,256 | | 9,394 | | 15,098 |

Table 8: E+ scenario - PILLAR 1: Efficiency/Electrification - Residential

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Sales of space heating units - Electric Heat Pump (%) | 14.6 | 27.2 | 64.4 | 85 | 88 | 88.1 | 88.1 |
| Sales of space heating units - Electric Resistance (%) | 20.3 | 22.6 | 12.3 | 8.07 | 7.57 | 7.66 | 7.68 |
| Sales of space heating units - Gas (%) | 55.2 | 36.9 | 17.1 | 3.52 | 1.45 | 1.32 | 1.3 |
| Sales of space heating units - Fossil (%) | 9.95 | 13.2 | 6.18 | 3.41 | 3.02 | 2.91 | 2.9 |
| Sales of water heating units - Electric Heat Pump (%) | 0 | 7.44 | 41.8 | 56.2 | 58.5 | 59.2 | 59 |

Table 8: E+ scenario - PILLAR 1: Efficiency/Electrification - Residential (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|-------|-------|-------|------|
| Sales of water heating units - Electric Resistance (%) | 38.4 | 49.2 | 38.5 | 39.8 | 39.9 | 39.3 | 39.5 |
| Sales of water heating units - Gas Furnace (%) | 58 | 40.9 | 18 | 2.56 | 0.155 | 0.003 | 0 |
| Sales of water heating units - Other (%) | 3.58 | 2.47 | 1.63 | 1.47 | 1.51 | 1.54 | 1.53 |
| Sales of cooking units - Electric Resistance (%) | 61.3 | 69.6 | 94.8 | 99.7 | 100 | 100 | 100 |
| Sales of cooking units - Gas (%) | 38.7 | 30.4 | 5.2 | 0.262 | 0 | 0 | 0 |
| Residential HVAC investment in 2020s vs. REF - Cumulative 5-yr (billion \$2018) | | 254 | 307 | | | | |

Table 9: E+ scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-----------|-----------|-------|-------|-------|-------|
| Sales of space heating units - Electric Heat Pump (%) | 2.95 | 17.6 | 52.9 | 76.9 | 80.6 | 80.8 | 80.8 |
| Sales of space heating units - Electric Resistance (%) | 7.91 | 9.07 | 14.4 | 17.7 | 18.4 | 18.4 | 18.4 |
| Sales of space heating units - Gas (%) | 85.2 | 70.1 | 32.1 | 5.37 | 1.07 | 0.82 | 0.817 |
| Sales of space heating units - Fossil (%) | 3.94 | 3.28 | 0.655 | 0.028 | 0 | 0 | 0 |
| Sales of water heating units - Electric Heat Pump (%) | 0.385 | 7.96 | 43.3 | 59.2 | 61.2 | 61.3 | 61.3 |
| Sales of water heating units - Electric Resistance (%) | 3.8 | 7.16 | 24 | 35.7 | 37.5 | 37.6 | 37.6 |
| Sales of water heating units - Gas (%) | 94.1 | 83.3 | 31.5 | 4.03 | 0.235 | 0.003 | 0 |
| Sales of water heating units - Other (%) | 1.66 | 1.59 | 1.2 | 1.1 | 1.1 | 1.11 | 1.11 |
| Sales of cooking units - Electric Resistance (%) | 32.5 | 46.4 | 80 | 86.6 | 87 | 87 | 87 |
| Sales of cooking units - Gas (%) | 67.5 | 53.6 | 20 | 13.4 | 13 | 13 | 13 |
| Commercial HVAC investment in 2020s - Cumulative 5-yr (million \$2018) | | 1,047,657 | 1,162,511 | | | | |

Table 10: E+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|---------|---------|---------|---------|---------|-----------|-----------|
| Installed - Onshore wind (MW) | 97,767 | 185,353 | 346,695 | 547,707 | 776,470 | 970,335 | 1,194,150 |
| Installed - Offshore wind (MW) | 29.3 | 1,034 | 4,949 | 16,240 | 40,241 | 103,788 | 223,624 |
| Installed - Rooftop PV (MW) | 33,317 | 52,523 | 69,448 | 90,809 | 117,114 | 148,351 | 185,890 |
| Installed - Utility-scale PV (MW) | 34,915 | 120,697 | 283,825 | 518,456 | 760,638 | 1,018,045 | 1,319,902 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Geothermal (MW) | 2,390 | 2,393 | 2,409 | 2,411 | 2,414 | 2,422 | 2,440 |
| Installed - Nuclear (MW) | 98,470 | 95,134 | 90,007 | 76,067 | 68,456 | 57,259 | 61,447 |
| Installed - Ccgt & gas steam (MW) | 334,471 | 336,439 | 376,538 | 400,087 | 346,238 | 264,930 | 232,629 |
| Installed - Ccgt w cc (MW) | 0 | 0 | 243 | 15,162 | 25,271 | 36,796 | 60,031 |
| Installed - Ct (MW) | 146,567 | 135,736 | 127,617 | 148,354 | 213,247 | 242,832 | 242,414 |
| Installed - Biomass (MW) | 9,996 | 9,132 | 7,837 | 6,117 | 4,696 | 3,379 | 2,472 |
| Installed - Biomass w cc (MW) | 0 | 0 | 2,920 | 2,968 | 7,511 | 10,643 | 11,058 |
| Installed - Coal (MW) | 215,907 | 48,614 | 171 | 170 | 150 | 122 | 43.4 |
| Installed - Other (MW) | 68,045 | 57,078 | 55,303 | 54,113 | 52,213 | 51,122 | 48,463 |
| Installed - Grid battery storage (MW) | | 626 | 2,536 | 15,363 | 51,414 | 131,610 | 178,317 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |

Table 11: E+ scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------|-------|------|-------|-------|-------|-------|-------|
| Onshore wind (TWh) | 412 | 764 | 1,446 | 2,199 | 3,029 | 3,710 | 4,485 |
| Offshore wind (TWh) | 0.093 | 3.9 | 20.3 | 80.7 | 182 | 455 | 934 |
| Rooftop PV (TWh) | 50.1 | 79.4 | 102 | 127 | 168 | 212 | 252 |
| Utility-scale PV (TWh) | 88.9 | 295 | 656 | 1,169 | 1,694 | 2,268 | 2,833 |
| Hydro (TWh) | 300 | 312 | 295 | 295 | 302 | 292 | 292 |

Table 11: *E+ scenario - PILLAR 2: Clean Electricity - Generation (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Geothermal (TWh) | 14.5 | 14.5 | 14.3 | 14.2 | 13.8 | 13.7 | 13.1 |
| Nuclear (TWh) | 802 | 775 | 733 | 620 | 558 | 467 | 503 |
| Gas (TWh) | 1,490 | 1,742 | 1,453 | 1,117 | 853 | 443 | 202 |
| Gas w cc (TWh) | 0 | 0 | 1.42 | 114 | 152 | 181 | 231 |
| Biomass (TWh) | 18.2 | 19.7 | 39.5 | 26.3 | 18.7 | 13.4 | 0.436 |
| Biomass w cc (TWh) | 0 | 0 | 21.7 | 21.9 | 53.7 | 76.5 | 79.7 |
| Coal (TWh) | 982 | 284 | 0.599 | 0.598 | 0.526 | 0.429 | 0.152 |

Table 12: *E+ scenario - PILLAR 2: Clean Electricity - Transmission*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|-------|------|------|------|------|
| Total HV transmission (for wind and solar) - Base (percent of 2020) | 0 | 0.326 | 0.621 | 1.03 | 1.49 | 2.02 | 2.09 |
| Total HV transmission (for wind and solar) - Constrained (percent of 2020) | 0 | 0.371 | 0.728 | 1.16 | 1.63 | 2.25 | 2.33 |

Table 13: *E+ scenario - PILLAR 3: Clean fuels - Bioenergy*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - Biopower (1000 tonnes) | 10,423 | 20,617 | 56,097 | 42,541 | 34,517 | 26,793 | 639 |
| Biomass input - Biopower w/ cc (1000 tonnes) | 0 | 0 | 13,108 | 13,204 | 32,422 | 46,168 | 48,033 |
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 73,607 | 137,071 | 279,102 | 426,955 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 90.5 | 101 | 104 | 79.1 |
| Biomass input - Bio-FT w/ CC (1000 tonnes) | 0 | 0 | 0 | 108 | 124 | 156 | 209 |
| Biomass input - Pyrolysis liquids (1000 tonnes) | 0 | 0 | 0 | 149 | 170 | 197 | 14,252 |
| Biomass input - Pyrolysis liquids w/ cc (1000 tonnes) | 0 | 0 | 0 | 102 | 118 | 164 | 93,276 |
| Biomass input - SNG (1000 tonnes) | 0 | 7.13 | 10.7 | 7.2 | 6.76 | 6.79 | 2.63 |
| Biomass input - Bio-SNG w/ CC (1000 tonnes) | 0 | 0 | 19.2 | 11.8 | 9.26 | 8.74 | 7.28 |
| Biomass input - Ethanol (1000 tonnes) | 129,506 | 129,506 | 129,536 | 125,006 | 67,634 | 10,261 | 905 |
| Number of facilities - Power (quantity) | 0 | 12 | 16 | 16 | 17 | 17 | 17 |
| Number of facilities - Power ccu (quantity) | 0 | 0 | 26 | 30 | 57 | 81 | 95 |
| Number of facilities - Allam power w ccu (quantity) | 0 | 0 | 0 | 14 | 21 | 32 | 44 |
| Number of facilities - Beccs hydrogen (quantity) | 0 | 0 | 0 | 95 | 183 | 377 | 563 |
| Number of facilities - Diesel (quantity) | 0 | 0 | 0 | 14 | 14 | 15 | 16 |
| Number of facilities - Diesel ccu (quantity) | 0 | 0 | 0 | 14 | 23 | 34 | 45 |
| Number of facilities - Pyrolysis (quantity) | 0 | 0 | 0 | 14 | 14 | 15 | 31 |
| Number of facilities - Pyrolysis ccu (quantity) | 0 | 0 | 0 | 14 | 23 | 34 | 171 |
| Number of facilities - Sng (quantity) | 0 | 14 | 15 | 15 | 15 | 16 | 17 |
| Number of facilities - Sng ccu (quantity) | 0 | 0 | 14 | 14 | 14 | 19 | 22 |

Table 14: *E+ scenario - PILLAR 4: CCUS - CO2 pipelines*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|--------|---------|---------|---------|---------|
| Trunk (km) | | 708 | 14,170 | 21,068 | 21,068 | 21,068 | 21,068 |
| Spur (km) | | 0 | 4,432 | 19,716 | 30,362 | 48,767 | 84,789 |
| All (km) | | 708 | 18,603 | 40,784 | 51,430 | 69,835 | 105,857 |
| Cumulative investment - Trunk (million \$2018) | | 3,706 | 66,274 | 100,656 | 100,656 | 100,656 | 100,656 |
| Cumulative investment - Spur (million \$2018) | | 0 | 2,974 | 14,456 | 23,370 | 39,305 | 66,458 |

Table 14: *E+ scenario - PILLAR 4: CCUS - CO2 pipelines (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|--------|---------|---------|---------|---------|
| Cumulative investment - All (million \$2018) | | 3,706 | 69,248 | 115,112 | 124,026 | 139,961 | 167,114 |

Table 15: *E+ scenario - PILLAR 4: CCUS - CO2 storage*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|-------|--------|--------|--------|--------|
| Annual (MMT) | 0 | 2.71 | 64.8 | 246 | 435 | 687 | 929 |
| Injection wells (wells) | | 0 | 71 | 356 | 612 | 998 | 1,260 |
| Resource characterization, appraisal, permitting costs (million \$2020) | | 1,500 | 8,750 | 13,000 | 13,000 | 13,000 | 13,000 |
| Wells and facilities construction costs (million \$2020) | | 0 | 2,264 | 10,683 | 18,483 | 29,950 | 37,860 |

Table 16: *E+ scenario - PILLAR 6: Land sinks - Forests*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -24,500 |
| Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) | | | | | | | -14,000 |
| Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) | | | | | | | -116,000 |
| Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) | | | | | | | -29,000 |
| Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -100,000 |
| Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -21,000 |
| Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) | | | | | | | -121,000 |
| Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) | | | | | | | -20,000 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) | | | | | | | 505,500 |
| Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) | | | | | | | -36,700 |
| Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) | | | | | | | -49,000 |
| Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) | | | | | | | -209,000 |
| Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -42,500 |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | | | | | | | 200,000 |
| Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) | | | | | | | -40,500 |
| Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) | | | | | | | -181,500 |
| Carbon sink potential - Mid - All (not counting overlap) (1000 tCO2e/y) | | | | | | | -142,000 |
| Carbon sink potential - High - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -119,000 |
| Carbon sink potential - High - Avoid deforestation (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | 1,020,200 |
| Carbon sink potential - High - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -48,900 |
| Carbon sink potential - High - Avoid deforestation (1000 tCO2e/y) | | | | | | | -84,000 |

Table 16: *E+ scenario - PILLAR 6: Land sinks - Forests (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - High - Extend rotation length (1000 tCO2e/y) | | | | | | | -302,000 |
| Carbon sink potential - High - Improve plantations (1000 tCO2e/y) | | | | | | | -57,000 |
| Carbon sink potential - High - Increase retention of HWP (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - Increase trees outside forests (1000 tCO2e/y) | | | | | | | 300,000 |
| Carbon sink potential - High - Reforest cropland (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - High - Reforest pasture (1000 tCO2e/y) | | | | | | | -242,000 |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - Restore productivity (1000 tCO2e/y) | | | | | | | 264,000 |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - Restore productivity (1000 tCO2e/y) | | | | | | | 1,535,900 |
| Carbon sink potential - High - Restore productivity (1000 tCO2e/y) | | | | | | | -178,000 |
| Land impacted for carbon sink potential - Low - Accelerate regeneration (1000 hectares) | | | | | | | 4,000 |
| Land impacted for carbon sink potential - Low - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 10,677 |
| Land impacted for carbon sink potential - Low - Extend rotation length (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 hectares) | | | | | | | 10,500 |
| Land impacted for carbon sink potential - Low - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Low - Increase trees outside forests (1000 hectares) | | | | | | | 3,000 |
| Land impacted for carbon sink potential - Low - Reforest cropland (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 1,300 |
| Land impacted for carbon sink potential - Low - Restore productivity (1000 hectares) | | | | | | | 35,700 |
| Land impacted for carbon sink potential - Low - Total impacted (over 30 years) (1000 hectares) | | | | | | | 132,177 |
| Land impacted for carbon sink potential - Mid - Accelerate regeneration (1000 hectares) | | | | | | | 6,000 |
| Land impacted for carbon sink potential - Mid - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,025 |
| Land impacted for carbon sink potential - Mid - Extend rotation length (1000 hectares) | | | | | | | 106,500 |
| Land impacted for carbon sink potential - Mid - Improve plantations (1000 hectares) | | | | | | | 15,800 |
| Land impacted for carbon sink potential - Mid - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Mid - Increase trees outside forests (1000 hectares) | | | | | | | 4,350 |

Table 16: *E+ scenario - PILLAR 6: Land sinks - Forests (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - Mid - Reforest cropland (1000 hectares) | | | | | | | 12,000 |
| Land impacted for carbon sink potential - Mid - Reforest pasture (1000 hectares) | | | | | | | 9,400 |
| Land impacted for carbon sink potential - Mid - Restore productivity (1000 hectares) | | | | | | | 71,900 |
| Land impacted for carbon sink potential - Mid - Total impacted (over 30 years) (1000 hectares) | | | | | | | 236,975 |
| Land impacted for carbon sink potential - High - Accelerate regeneration (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - High - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,373 |
| Land impacted for carbon sink potential - High - Extend rotation length (1000 hectares) | | | | | | | 154,000 |
| Land impacted for carbon sink potential - High - Improve plantations (1000 hectares) | | | | | | | 21,000 |
| Land impacted for carbon sink potential - High - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - High - Increase trees outside forests (1000 hectares) | | | | | | | 5,700 |
| Land impacted for carbon sink potential - High - Reforest cropland (1000 hectares) | | | | | | | 16,000 |
| Land impacted for carbon sink potential - High - Reforest pasture (1000 hectares) | | | | | | | 7,500 |
| Land impacted for carbon sink potential - High - Restore productivity (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - High - Total impacted (over 30 years) (1000 hectares) | | | | | | | 282,573 |

Table 17: *E+ scenario - PILLAR 6: Land sinks - Agriculture*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|----------|
| Carbon sink potential - Moderate deployment - Corn-ethanol to energy grasses (1000 tCO2e/y) | | | | | | | -23,286 |
| Carbon sink potential - Moderate deployment - Cropland measures (1000 tCO2e/y) | | | | | | | -106,430 |
| Carbon sink potential - Moderate deployment - Permanent conservation cover (1000 tCO2e/y) | | | | | | | -3,696 |
| Carbon sink potential - Moderate deployment - Total (1000 tCO2e/y) | | | | | | | -133,412 |
| Carbon sink potential - Aggressive deployment - Corn-ethanol to energy grasses (1000 tCO2e/y) | | | | | | | -23,286 |
| Carbon sink potential - Aggressive deployment - Cropland measures (1000 tCO2e/y) | | | | | | | -203,503 |

Table 17: *E+ scenario - PILLAR 6: Land sinks - Agriculture (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Aggressive deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -7,391 |
| Carbon sink potential - Aggressive deployment - Total (1000 tCO ₂ e/y) | | | | | | | -234,180 |
| Land impacted for carbon sink - Moderate deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 11,287 |
| Land impacted for carbon sink - Moderate deployment - Cropland measures (1000 hectares) | | | | | | | 71,390 |
| Land impacted for carbon sink - Moderate deployment - Permanent conservation cover (1000 hectares) | | | | | | | 6,375 |
| Land impacted for carbon sink - Moderate deployment - Total (1000 hectares) | | | | | | | 89,052 |
| Land impacted for carbon sink - Aggressive deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 11,287 |
| Land impacted for carbon sink - Aggressive deployment - Cropland measures (1000 hectares) | | | | | | | 136,405 |
| Land impacted for carbon sink - Aggressive deployment - Permanent conservation cover (1000 hectares) | | | | | | | 12,749 |
| Land impacted for carbon sink - Aggressive deployment - Total (1000 hectares) | | | | | | | 160,442 |

Table 18: *E+ scenario - PILLAR 6: Land sinks - Total assumed land sink*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|------|-------|-------|
| Total assumed land sink (Gt CO ₂ e/y) | -0.7 | -0.73 | -0.75 | -0.78 | -0.8 | -0.83 | -0.85 |

Table 19: *E- scenario - IMPACTS - Health*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|-------|-------|
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | | 1,460 | 843 | 408 | 181 | 62.3 | 43.1 |
| Premature deaths from air pollution - Mobile - On-Road (deaths) | | 11,726 | 12,039 | 11,890 | 10,859 | 8,759 | 6,079 |
| Premature deaths from air pollution - Gas Stations (deaths) | | 679 | 694 | 678 | 614 | 493 | 344 |
| Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | | 2,179 | 2,044 | 1,857 | 1,562 | 1,178 | 785 |
| Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | | 564 | 545 | 527 | 466 | 354 | 231 |
| Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | | 198 | 201 | 201 | 187 | 154 | 115 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 105 | 101 | 96 | 90.9 | 85.7 | 80.1 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 1,444 | 1,457 | 1,430 | 1,311 | 1,099 | 846 |

Table 19: *E- scenario - IMPACTS - Health (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|--------|--------|--------|
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 354 | 324 | 295 | 255 | 215 | 176 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 170 | 154 | 140 | 124 | 109 | 94.1 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 78.4 | 41.9 | 41.4 | 40.6 | 40.1 | 38.1 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 3,809 | 3,424 | 2,925 | 2,527 | 2,222 | 1,583 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 22,684 | 29.5 | 28.4 | 24.2 | 16.7 | 1.24 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 12,934 | 7,464 | 3,616 | 1,603 | 552 | 382 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 104,258 | 107,043 | 105,711 | 96,553 | 77,882 | 54,050 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 6,015 | 6,145 | 6,003 | 5,440 | 4,367 | 3,042 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 19,305 | 18,115 | 16,457 | 13,841 | 10,437 | 6,953 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 4,996 | 4,831 | 4,667 | 4,128 | 3,139 | 2,048 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 1,751 | 1,777 | 1,781 | 1,661 | 1,366 | 1,020 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 932 | 892 | 850 | 805 | 758 | 709 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 12,787 | 12,898 | 12,661 | 11,609 | 9,733 | 7,490 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 3,133 | 2,865 | 2,608 | 2,254 | 1,902 | 1,554 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 1,502 | 1,367 | 1,236 | 1,102 | 966 | 833 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 692 | 369 | 365 | 358 | 354 | 337 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 33,820 | 30,408 | 25,973 | 22,443 | 19,734 | 14,061 |

Table 20: *E- scenario - IMPACTS - Jobs*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|-----------|-----------|
| By economic sector - Agriculture (jobs) | | 32,671 | 42,263 | 55,525 | 55,304 | 48,631 | 47,267 |
| By economic sector - Construction (jobs) | | 576,166 | 743,803 | 850,678 | 965,861 | 1,230,893 | 1,522,534 |
| By economic sector - Manufacturing (jobs) | | 406,181 | 477,205 | 485,267 | 491,716 | 563,535 | 598,987 |
| By economic sector - Mining (jobs) | | 459,533 | 349,848 | 267,959 | 202,834 | 155,840 | 95,673 |
| By economic sector - Other (jobs) | | 56,369 | 82,281 | 105,496 | 133,458 | 185,269 | 253,438 |
| By economic sector - Pipeline (jobs) | | 46,559 | 52,128 | 44,106 | 34,087 | 32,405 | 32,455 |
| By economic sector - Professional (jobs) | | 327,474 | 397,314 | 484,912 | 602,384 | 769,337 | 955,606 |

Table 20: E- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| By economic sector - Trade (jobs) | | 298,028 | 313,915 | 345,097 | 392,309 | 480,746 | 588,000 |
| By economic sector - Utilities (jobs) | | 457,628 | 559,152 | 646,846 | 757,649 | 1,010,515 | 1,274,900 |
| By resource sector - Biomass (jobs) | | 85,042 | 102,575 | 156,018 | 206,408 | 207,068 | 199,424 |
| By resource sector - CO2 (jobs) | | 7,188 | 108,613 | 93,920 | 44,746 | 67,718 | 127,383 |
| By resource sector - Coal (jobs) | | 71,673 | 20,450 | 10,922 | 9,493 | 8,396 | 7,200 |
| By resource sector - Grid (jobs) | | 503,761 | 699,467 | 941,074 | 1,204,876 | 1,737,321 | 2,238,716 |
| By resource sector - Natural Gas (jobs) | | 552,821 | 411,650 | 307,795 | 260,549 | 208,657 | 168,724 |
| By resource sector - Nuclear (jobs) | | 49,017 | 53,548 | 50,157 | 53,409 | 47,329 | 43,896 |
| By resource sector - Oil (jobs) | | 792,878 | 708,136 | 634,028 | 554,637 | 474,581 | 308,359 |
| By resource sector - Solar (jobs) | | 374,087 | 524,459 | 588,017 | 662,753 | 863,333 | 1,097,677 |
| By resource sector - Wind (jobs) | | 224,141 | 389,011 | 503,955 | 638,733 | 862,767 | 1,177,481 |
| By education level - All sectors - High school diploma or less (jobs) | | 1,107,372 | 1,269,514 | 1,386,107 | 1,522,690 | 1,867,770 | 2,231,550 |
| By education level - All sectors - Associates degree or some college (jobs) | | 795,967 | 919,997 | 1,008,756 | 1,125,501 | 1,407,897 | 1,711,674 |
| By education level - All sectors - Bachelors degree (jobs) | | 593,528 | 648,336 | 694,448 | 765,855 | 929,848 | 1,100,199 |
| By education level - All sectors - Masters or professional degree (jobs) | | 142,994 | 157,057 | 170,943 | 191,979 | 235,428 | 281,939 |
| By education level - All sectors - Doctoral degree (jobs) | | 20,747 | 23,005 | 25,633 | 29,579 | 36,228 | 43,499 |
| By education level - Biomass sector - High school diploma or less (jobs) | | 49,010 | 59,413 | 84,349 | 99,696 | 94,444 | 90,761 |
| By education level - Biomass sector - Associates degree or some college (jobs) | | 16,251 | 19,569 | 31,894 | 45,570 | 47,098 | 45,477 |
| By education level - Biomass sector - Bachelors degree (jobs) | | 14,930 | 17,672 | 29,620 | 45,296 | 48,357 | 46,565 |
| By education level - Biomass sector - Masters or professional degree (jobs) | | 4,115 | 5,002 | 8,479 | 13,078 | 14,098 | 13,643 |
| By education level - Biomass sector - Doctoral degree (jobs) | | 736 | 920 | 1,676 | 2,768 | 3,070 | 2,979 |
| By education level - CO2 sector - High school diploma or less (jobs) | | 3,107 | 47,531 | 40,756 | 19,094 | 28,995 | 55,693 |
| By education level - CO2 sector - Associates degree or some college (jobs) | | 2,515 | 38,458 | 32,848 | 15,318 | 23,219 | 44,587 |
| By education level - CO2 sector - Bachelors degree (jobs) | | 1,259 | 18,272 | 16,339 | 8,256 | 12,395 | 21,828 |
| By education level - CO2 sector - Masters or professional degree (jobs) | | 281 | 4,019 | 3,644 | 1,884 | 2,820 | 4,839 |
| By education level - CO2 sector - Doctoral degree (jobs) | | 25.6 | 334 | 332 | 195 | 289 | 436 |
| By education level - Coal sector - High school diploma or less (jobs) | | 31,106 | 9,425 | 5,799 | 4,961 | 4,315 | 3,636 |
| By education level - Coal sector - Associates degree or some college (jobs) | | 22,072 | 6,164 | 2,995 | 2,610 | 2,316 | 1,994 |
| By education level - Coal sector - Bachelors degree (jobs) | | 14,426 | 3,788 | 1,704 | 1,536 | 1,407 | 1,249 |
| By education level - Coal sector - Masters or professional degree (jobs) | | 3,542 | 934 | 372 | 338 | 312 | 279 |
| By education level - Coal sector - Doctoral degree (jobs) | | 527 | 139 | 51.8 | 48.4 | 45.9 | 42.2 |
| By education level - Grid sector - High school diploma or less (jobs) | | 213,834 | 298,312 | 403,226 | 518,635 | 751,221 | 972,363 |
| By education level - Grid sector - Associates degree or some college (jobs) | | 167,223 | 232,115 | 312,180 | 399,531 | 575,835 | 741,665 |
| By education level - Grid sector - Bachelors degree (jobs) | | 95,828 | 132,147 | 176,587 | 224,568 | 321,649 | 411,739 |
| By education level - Grid sector - Masters or professional degree (jobs) | | 24,113 | 33,148 | 44,160 | 55,988 | 79,952 | 102,043 |
| By education level - Grid sector - Doctoral degree (jobs) | | 2,763 | 3,746 | 4,921 | 6,153 | 8,664 | 10,905 |

Table 20: E- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|-----------|-----------|-----------|-----------|-----------|
| By education level - Natural gas sector - High school diploma or less (jobs) | | 217,308 | 162,916 | 122,486 | 104,023 | 83,752 | 67,883 |
| By education level - Natural gas sector - Associates degree or some college (jobs) | | 177,428 | 132,902 | 100,712 | 86,735 | 70,072 | 57,130 |
| By education level - Natural gas sector - Bachelors degree (jobs) | | 123,689 | 90,752 | 66,362 | 54,800 | 43,112 | 34,393 |
| By education level - Natural gas sector - Masters or professional degree (jobs) | | 30,288 | 22,094 | 16,086 | 13,254 | 10,379 | 8,263 |
| By education level - Natural gas sector - Doctoral degree (jobs) | | 4,108 | 2,986 | 2,148 | 1,737 | 1,341 | 1,055 |
| By education level - Nuclear sector - High school diploma or less (jobs) | | 16,614 | 18,203 | 17,099 | 18,258 | 16,224 | 15,088 |
| By education level - Nuclear sector - Associates degree or some college (jobs) | | 13,384 | 14,625 | 13,702 | 14,594 | 12,936 | 12,000 |
| By education level - Nuclear sector - Bachelors degree (jobs) | | 14,468 | 15,771 | 14,741 | 15,664 | 13,852 | 12,821 |
| By education level - Nuclear sector - Masters or professional degree (jobs) | | 3,916 | 4,262 | 3,976 | 4,218 | 3,724 | 3,442 |
| By education level - Nuclear sector - Doctoral degree (jobs) | | 634 | 687 | 638 | 674 | 593 | 545 |
| By education level - Oil sector - High school diploma or less (jobs) | | 318,831 | 287,355 | 259,739 | 229,389 | 198,127 | 130,297 |
| By education level - Oil sector - Associates degree or some college (jobs) | | 206,241 | 184,787 | 166,010 | 145,737 | 125,155 | 81,627 |
| By education level - Oil sector - Bachelors degree (jobs) | | 212,702 | 187,569 | 165,668 | 142,894 | 120,528 | 76,911 |
| By education level - Oil sector - Masters or professional degree (jobs) | | 48,234 | 42,333 | 37,202 | 31,924 | 26,788 | 16,973 |
| By education level - Oil sector - Doctoral degree (jobs) | | 6,871 | 6,092 | 5,410 | 4,694 | 3,983 | 2,552 |
| By education level - Solar PV sector - High school diploma or less (jobs) | | 167,978 | 232,999 | 258,279 | 287,677 | 370,548 | 465,172 |
| By education level - Solar PV sector - Associates degree or some college (jobs) | | 119,846 | 168,164 | 188,823 | 213,146 | 278,021 | 354,160 |
| By education level - Solar PV sector - Bachelors degree (jobs) | | 67,321 | 96,106 | 109,230 | 124,967 | 165,442 | 213,429 |
| By education level - Solar PV sector - Masters or professional degree (jobs) | | 16,127 | 23,169 | 26,936 | 31,379 | 41,889 | 55,057 |
| By education level - Solar PV sector - Doctoral degree (jobs) | | 2,816 | 4,021 | 4,749 | 5,583 | 7,433 | 9,860 |
| By education level - Wind sector - High school diploma or less (jobs) | | 89,585 | 153,359 | 194,374 | 240,956 | 320,143 | 430,658 |
| By education level - Wind sector - Associates degree or some college (jobs) | | 71,007 | 123,214 | 159,591 | 202,260 | 273,245 | 373,034 |
| By education level - Wind sector - Bachelors degree (jobs) | | 48,906 | 86,259 | 114,196 | 147,874 | 203,105 | 281,263 |
| By education level - Wind sector - Masters or professional degree (jobs) | | 12,378 | 22,097 | 30,089 | 39,916 | 55,464 | 77,400 |
| By education level - Wind sector - Doctoral degree (jobs) | | 2,266 | 4,081 | 5,706 | 7,727 | 10,809 | 15,125 |
| Related work experience - All sectors - None (jobs) | | 377,547 | 431,905 | 472,540 | 523,333 | 646,181 | 777,736 |
| Related work experience - All sectors - Up to 1 year (jobs) | | 523,819 | 601,813 | 660,775 | 730,476 | 896,113 | 1,074,174 |
| Related work experience - All sectors - 1 to 4 years (jobs) | | 971,448 | 1,093,869 | 1,187,751 | 1,313,855 | 1,616,620 | 1,934,615 |
| Related work experience - All sectors - 4 to 10 years (jobs) | | 619,121 | 701,346 | 761,793 | 844,801 | 1,044,383 | 1,255,835 |
| Related work experience - All sectors - Over 10 years (jobs) | | 168,673 | 188,976 | 203,027 | 223,138 | 273,873 | 326,501 |

Table 20: E- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| Related work experience - Biomass sector - None (jobs) | | 14,396 | 17,318 | 25,423 | 31,889 | 31,116 | 29,868 |
| Related work experience - Biomass sector - Up to 1 year (jobs) | | 28,293 | 33,498 | 47,022 | 55,985 | 53,058 | 50,959 |
| Related work experience - Biomass sector - 1 to 4 years (jobs) | | 25,475 | 31,590 | 50,358 | 69,822 | 71,904 | 69,386 |
| Related work experience - Biomass sector - 4 to 10 years (jobs) | | 13,243 | 15,909 | 26,334 | 38,711 | 40,580 | 39,157 |
| Related work experience - Biomass sector - Over 10 years (jobs) | | 3,634 | 4,259 | 6,881 | 10,001 | 10,410 | 10,054 |
| Related work experience - CO2 sector - None (jobs) | | 1,111 | 16,924 | 14,505 | 6,804 | 10,308 | 19,683 |
| Related work experience - CO2 sector - Up to 1 year (jobs) | | 1,290 | 19,595 | 16,943 | 8,053 | 12,221 | 23,169 |
| Related work experience - CO2 sector - 1 to 4 years (jobs) | | 2,572 | 38,682 | 33,555 | 16,084 | 24,311 | 45,391 |
| Related work experience - CO2 sector - 4 to 10 years (jobs) | | 1,778 | 26,893 | 23,208 | 11,024 | 16,680 | 31,434 |
| Related work experience - CO2 sector - Over 10 years (jobs) | | 438 | 6,520 | 5,709 | 2,781 | 4,197 | 7,707 |
| Related work experience - Coal sector - None (jobs) | | 9,744 | 2,719 | 1,358 | 1,180 | 1,044 | 895 |
| Related work experience - Coal sector - Up to 1 year (jobs) | | 14,699 | 4,460 | 2,767 | 2,384 | 2,089 | 1,775 |
| Related work experience - Coal sector - 1 to 4 years (jobs) | | 27,190 | 7,760 | 4,177 | 3,623 | 3,197 | 2,734 |
| Related work experience - Coal sector - 4 to 10 years (jobs) | | 16,006 | 4,373 | 2,054 | 1,806 | 1,616 | 1,403 |
| Related work experience - Coal sector - Over 10 years (jobs) | | 4,035 | 1,138 | 566 | 500 | 450 | 393 |
| Related work experience - Grid sector - None (jobs) | | 74,823 | 103,970 | 139,983 | 179,341 | 258,753 | 333,618 |
| Related work experience - Grid sector - Up to 1 year (jobs) | | 96,456 | 134,337 | 181,293 | 232,830 | 336,762 | 435,307 |
| Related work experience - Grid sector - 1 to 4 years (jobs) | | 182,162 | 252,734 | 339,769 | 434,678 | 626,285 | 806,417 |
| Related work experience - Grid sector - 4 to 10 years (jobs) | | 119,377 | 165,504 | 222,336 | 284,230 | 409,212 | 526,511 |
| Related work experience - Grid sector - Over 10 years (jobs) | | 30,942 | 42,922 | 57,693 | 73,796 | 106,309 | 136,863 |
| Related work experience - Natural gas sector - None (jobs) | | 80,026 | 59,877 | 45,157 | 38,619 | 31,112 | 25,287 |
| Related work experience - Natural gas sector - Up to 1 year (jobs) | | 96,199 | 71,564 | 53,404 | 45,103 | 36,121 | 29,186 |
| Related work experience - Natural gas sector - 1 to 4 years (jobs) | | 204,017 | 151,824 | 113,306 | 95,655 | 76,470 | 61,747 |
| Related work experience - Natural gas sector - 4 to 10 years (jobs) | | 135,709 | 101,088 | 75,757 | 64,353 | 51,598 | 41,784 |
| Related work experience - Natural gas sector - Over 10 years (jobs) | | 36,871 | 27,298 | 20,171 | 16,819 | 13,357 | 10,719 |
| Related work experience - Nuclear sector - None (jobs) | | 6,178 | 6,757 | 6,336 | 6,753 | 5,990 | 5,561 |
| Related work experience - Nuclear sector - Up to 1 year (jobs) | | 9,020 | 9,860 | 9,241 | 9,847 | 8,731 | 8,102 |
| Related work experience - Nuclear sector - 1 to 4 years (jobs) | | 18,296 | 19,980 | 18,709 | 19,915 | 17,642 | 16,357 |
| Related work experience - Nuclear sector - 4 to 10 years (jobs) | | 11,869 | 12,959 | 12,132 | 12,912 | 11,436 | 10,601 |
| Related work experience - Nuclear sector - Over 10 years (jobs) | | 3,654 | 3,992 | 3,740 | 3,983 | 3,530 | 3,274 |

Table 20: E- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Related work experience - Oil sector - None (jobs) | | 106,857 | 95,809 | 86,141 | 75,674 | 65,021 | 42,502 |
| Related work experience - Oil sector - Up to 1 year (jobs) | | 147,845 | 132,071 | 118,309 | 103,547 | 88,636 | 57,791 |
| Related work experience - Oil sector - 1 to 4 years (jobs) | | 302,135 | 269,872 | 241,614 | 211,329 | 180,792 | 117,324 |
| Related work experience - Oil sector - 4 to 10 years (jobs) | | 183,324 | 163,462 | 146,091 | 127,563 | 108,950 | 70,576 |
| Related work experience - Oil sector - Over 10 years (jobs) | | 52,718 | 46,922 | 41,873 | 36,525 | 31,181 | 20,166 |
| Related work experience - Solar PV sector - None (jobs) | | 53,898 | 75,636 | 85,165 | 96,355 | 125,798 | 160,694 |
| Related work experience - Solar PV sector - Up to 1 year (jobs) | | 83,669 | 116,633 | 129,876 | 145,365 | 188,165 | 237,414 |
| Related work experience - Solar PV sector - 1 to 4 years (jobs) | | 129,979 | 182,798 | 205,741 | 232,782 | 304,256 | 388,439 |
| Related work experience - Solar PV sector - 4 to 10 years (jobs) | | 84,607 | 118,539 | 133,017 | 149,982 | 195,272 | 248,373 |
| Related work experience - Solar PV sector - Over 10 years (jobs) | | 21,934 | 30,854 | 34,218 | 38,269 | 49,843 | 62,757 |
| Related work experience - Wind sector - None (jobs) | | 30,515 | 52,896 | 68,472 | 86,717 | 117,038 | 159,627 |
| Related work experience - Wind sector - Up to 1 year (jobs) | | 46,348 | 79,795 | 101,920 | 127,364 | 170,330 | 230,470 |
| Related work experience - Wind sector - 1 to 4 years (jobs) | | 79,623 | 138,631 | 180,523 | 229,968 | 311,763 | 426,820 |
| Related work experience - Wind sector - 4 to 10 years (jobs) | | 53,208 | 92,618 | 120,865 | 154,221 | 209,039 | 285,996 |
| Related work experience - Wind sector - Over 10 years (jobs) | | 14,448 | 25,070 | 32,175 | 40,463 | 54,597 | 74,568 |
| On-the-Job Training - All sectors - None (jobs) | | 148,904 | 166,552 | 180,443 | 199,553 | 243,896 | 291,623 |
| On-the-Job Training - All sectors - Up to 1 year (jobs) | | 1,782,991 | 2,008,181 | 2,181,962 | 2,407,721 | 2,947,340 | 3,513,664 |
| On-the-Job Training - All sectors - 1 to 4 years (jobs) | | 540,597 | 621,609 | 678,316 | 753,236 | 939,177 | 1,138,068 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 162,310 | 191,981 | 213,521 | 240,707 | 304,890 | 375,746 |
| On-the-Job Training - All sectors - Over 10 years (jobs) | | 25,807 | 29,587 | 31,644 | 34,387 | 41,867 | 49,761 |
| On-the-Job Training - Biomass sector - None (jobs) | | 5,279 | 6,082 | 9,258 | 12,627 | 12,720 | 12,160 |
| On-the-Job Training - Biomass sector - Up to 1 year (jobs) | | 67,622 | 81,530 | 121,665 | 157,468 | 156,559 | 150,626 |
| On-the-Job Training - Biomass sector - 1 to 4 years (jobs) | | 9,389 | 11,579 | 19,238 | 27,648 | 28,734 | 27,841 |
| On-the-Job Training - Biomass sector - 4 to 10 years (jobs) | | 2,148 | 2,693 | 4,803 | 7,245 | 7,639 | 7,428 |
| On-the-Job Training - Biomass sector - Over 10 years (jobs) | | 604 | 691 | 1,053 | 1,421 | 1,417 | 1,369 |
| On-the-Job Training - CO2 sector - None (jobs) | | 338 | 5,026 | 4,422 | 2,168 | 3,276 | 5,997 |
| On-the-Job Training - CO2 sector - Up to 1 year (jobs) | | 4,360 | 65,304 | 56,917 | 27,497 | 41,543 | 77,000 |
| On-the-Job Training - CO2 sector - 1 to 4 years (jobs) | | 1,763 | 26,977 | 23,043 | 10,740 | 16,291 | 31,334 |
| On-the-Job Training - CO2 sector - 4 to 10 years (jobs) | | 656 | 10,212 | 8,592 | 3,891 | 5,924 | 11,754 |
| On-the-Job Training - CO2 sector - Over 10 years (jobs) | | 71.9 | 1,094 | 946 | 450 | 683 | 1,298 |

Table 20: E- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|-----------|-----------|
| On-the-Job Training - Coal sector - None (jobs) | | 3,553 | 972 | 508 | 448 | 402 | 350 |
| On-the-Job Training - Coal sector - Up to 1 year (jobs) | | 49,217 | 14,212 | 8,005 | 6,959 | 6,155 | 5,276 |
| On-the-Job Training - Coal sector - 1 to 4 years (jobs) | | 14,210 | 4,006 | 1,915 | 1,660 | 1,465 | 1,255 |
| On-the-Job Training - Coal sector - 4 to 10 years (jobs) | | 4,211 | 1,121 | 423 | 363 | 316 | 268 |
| On-the-Job Training - Coal sector - Over 10 years (jobs) | | 482 | 139 | 70.7 | 63.4 | 57.9 | 51.4 |
| On-the-Job Training - Grid sector - None (jobs) | | 24,654 | 34,185 | 45,932 | 58,733 | 84,588 | 108,877 |
| On-the-Job Training - Grid sector - Up to 1 year (jobs) | | 323,448 | 448,930 | 603,774 | 772,751 | 1,113,863 | 1,434,870 |
| On-the-Job Training - Grid sector - 1 to 4 years (jobs) | | 113,162 | 157,246 | 211,716 | 271,248 | 391,364 | 504,611 |
| On-the-Job Training - Grid sector - 4 to 10 years (jobs) | | 38,459 | 53,490 | 72,083 | 92,433 | 133,480 | 172,251 |
| On-the-Job Training - Grid sector - Over 10 years (jobs) | | 4,037 | 5,616 | 7,570 | 9,710 | 14,026 | 18,108 |
| On-the-Job Training - Natural gas sector - None (jobs) | | 28,855 | 21,202 | 15,568 | 12,935 | 10,235 | 8,197 |
| On-the-Job Training - Natural gas sector - Up to 1 year (jobs) | | 356,885 | 265,191 | 197,228 | 165,749 | 132,187 | 106,510 |
| On-the-Job Training - Natural gas sector - 1 to 4 years (jobs) | | 122,490 | 91,627 | 69,213 | 59,363 | 47,896 | 38,975 |
| On-the-Job Training - Natural gas sector - 4 to 10 years (jobs) | | 39,335 | 29,727 | 22,887 | 20,072 | 16,397 | 13,478 |
| On-the-Job Training - Natural gas sector - Over 10 years (jobs) | | 5,256 | 3,904 | 2,898 | 2,430 | 1,942 | 1,564 |
| On-the-Job Training - Nuclear sector - None (jobs) | | 3,292 | 3,595 | 3,366 | 3,583 | 3,174 | 2,942 |
| On-the-Job Training - Nuclear sector - Up to 1 year (jobs) | | 33,436 | 36,513 | 34,189 | 36,392 | 32,237 | 29,889 |
| On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) | | 9,490 | 10,378 | 9,731 | 10,373 | 9,201 | 8,543 |
| On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) | | 2,289 | 2,503 | 2,348 | 2,503 | 2,220 | 2,062 |
| On-the-Job Training - Nuclear sector - Over 10 years (jobs) | | 510 | 558 | 524 | 559 | 496 | 461 |
| On-the-Job Training - Oil sector - None (jobs) | | 48,244 | 42,447 | 37,430 | 32,239 | 27,156 | 17,403 |
| On-the-Job Training - Oil sector - Up to 1 year (jobs) | | 558,254 | 498,517 | 446,253 | 390,274 | 333,848 | 216,802 |
| On-the-Job Training - Oil sector - 1 to 4 years (jobs) | | 144,505 | 129,357 | 116,099 | 101,822 | 87,357 | 56,884 |
| On-the-Job Training - Oil sector - 4 to 10 years (jobs) | | 34,135 | 30,881 | 28,017 | 24,834 | 21,524 | 14,206 |
| On-the-Job Training - Oil sector - Over 10 years (jobs) | | 7,740 | 6,934 | 6,229 | 5,469 | 4,697 | 3,065 |
| On-the-Job Training - Solar PV sector - None (jobs) | | 22,087 | 31,086 | 35,245 | 40,109 | 52,538 | 67,513 |
| On-the-Job Training - Solar PV sector - Up to 1 year (jobs) | | 241,291 | 339,978 | 380,894 | 429,638 | 561,782 | 714,506 |
| On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) | | 79,249 | 110,260 | 123,324 | 138,450 | 179,159 | 226,945 |
| On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) | | 26,925 | 36,872 | 41,708 | 47,028 | 60,239 | 76,834 |
| On-the-Job Training - Solar PV sector - Over 10 years (jobs) | | 4,536 | 6,263 | 6,846 | 7,527 | 9,616 | 11,878 |

Table 20: E- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| On-the-Job Training - Wind sector - None (jobs) | | 12,601 | 21,957 | 28,715 | 36,710 | 49,807 | 68,184 |
| On-the-Job Training - Wind sector - Up to 1 year (jobs) | | 148,478 | 258,006 | 333,037 | 420,993 | 569,166 | 778,184 |
| On-the-Job Training - Wind sector - 1 to 4 years (jobs) | | 46,340 | 80,179 | 104,037 | 131,932 | 177,710 | 241,680 |
| On-the-Job Training - Wind sector - 4 to 10 years (jobs) | | 14,152 | 24,482 | 32,660 | 42,339 | 57,150 | 77,466 |
| On-the-Job Training - Wind sector - Over 10 years (jobs) | | 2,571 | 4,388 | 5,506 | 6,759 | 8,933 | 11,967 |
| On-Site or In-Plant Training - All sectors - None (jobs) | | 429,454 | 488,244 | 532,265 | 590,883 | 727,293 | 873,554 |
| On-Site or In-Plant Training - All sectors - Up to 1 year (jobs) | | 1,615,613 | 1,819,868 | 1,976,790 | 2,180,812 | 2,672,300 | 3,188,552 |
| On-Site or In-Plant Training - All sectors - 1 to 4 years (jobs) | | 422,732 | 484,899 | 528,726 | 586,034 | 728,624 | 880,305 |
| On-Site or In-Plant Training - All sectors - 4 to 10 years (jobs) | | 171,916 | 200,164 | 220,609 | 246,963 | 309,962 | 378,702 |
| On-Site or In-Plant Training - All sectors - Over 10 years (jobs) | | 20,894 | 24,734 | 27,497 | 30,912 | 38,992 | 47,749 |
| On-Site or In-Plant Training - Biomass sector - None (jobs) | | 13,768 | 16,945 | 26,595 | 36,348 | 37,151 | 35,807 |
| On-Site or In-Plant Training - Biomass sector - Up to 1 year (jobs) | | 59,432 | 71,230 | 106,033 | 137,105 | 136,029 | 130,827 |
| On-Site or In-Plant Training - Biomass sector - 1 to 4 years (jobs) | | 8,583 | 10,499 | 16,845 | 23,383 | 23,942 | 23,154 |
| On-Site or In-Plant Training - Biomass sector - 4 to 10 years (jobs) | | 2,669 | 3,231 | 5,551 | 8,269 | 8,664 | 8,399 |
| On-Site or In-Plant Training - Biomass sector - Over 10 years (jobs) | | 589 | 670 | 994 | 1,303 | 1,282 | 1,237 |
| On-Site or In-Plant Training - CO2 sector - None (jobs) | | 1,101 | 16,551 | 14,388 | 6,918 | 10,464 | 19,512 |
| On-Site or In-Plant Training - CO2 sector - Up to 1 year (jobs) | | 4,033 | 60,513 | 52,654 | 25,364 | 38,334 | 71,274 |
| On-Site or In-Plant Training - CO2 sector - 1 to 4 years (jobs) | | 1,325 | 20,254 | 17,327 | 8,097 | 12,280 | 23,564 |
| On-Site or In-Plant Training - CO2 sector - 4 to 10 years (jobs) | | 652 | 10,094 | 8,539 | 3,907 | 5,940 | 11,656 |
| On-Site or In-Plant Training - CO2 sector - Over 10 years (jobs) | | 77.5 | 1,201 | 1,012 | 460 | 699 | 1,377 |
| On-Site or In-Plant Training - Coal sector - None (jobs) | | 10,585 | 2,911 | 1,420 | 1,259 | 1,136 | 994 |
| On-Site or In-Plant Training - Coal sector - Up to 1 year (jobs) | | 45,080 | 13,086 | 7,424 | 6,436 | 5,677 | 4,853 |
| On-Site or In-Plant Training - Coal sector - 1 to 4 years (jobs) | | 11,186 | 3,182 | 1,599 | 1,384 | 1,219 | 1,042 |
| On-Site or In-Plant Training - Coal sector - 4 to 10 years (jobs) | | 4,304 | 1,136 | 431 | 372 | 326 | 278 |
| On-Site or In-Plant Training - Coal sector - Over 10 years (jobs) | | 519 | 135 | 47.4 | 42.1 | 38 | 33.4 |
| On-Site or In-Plant Training - Grid sector - None (jobs) | | 76,714 | 106,279 | 142,675 | 182,274 | 262,264 | 337,248 |
| On-Site or In-Plant Training - Grid sector - Up to 1 year (jobs) | | 296,871 | 412,229 | 554,659 | 710,200 | 1,024,137 | 1,319,839 |
| On-Site or In-Plant Training - Grid sector - 1 to 4 years (jobs) | | 87,009 | 120,965 | 162,948 | 208,872 | 301,517 | 388,962 |
| On-Site or In-Plant Training - Grid sector - 4 to 10 years (jobs) | | 38,213 | 53,114 | 71,532 | 91,669 | 132,295 | 170,618 |
| On-Site or In-Plant Training - Grid sector - Over 10 years (jobs) | | 4,953 | 6,881 | 9,261 | 11,861 | 17,107 | 22,049 |

Table 20: E- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|---------|
| On-Site or In-Plant Training - Natural gas sector - None (jobs) | | 88,008 | 65,188 | 48,520 | 40,955 | 32,692 | 26,390 |
| On-Site or In-Plant Training - Natural gas sector - Up to 1 year (jobs) | | 325,428 | 241,881 | 179,991 | 151,372 | 120,795 | 97,369 |
| On-Site or In-Plant Training - Natural gas sector - 1 to 4 years (jobs) | | 93,144 | 69,692 | 52,578 | 44,991 | 36,270 | 29,485 |
| On-Site or In-Plant Training - Natural gas sector - 4 to 10 years (jobs) | | 41,339 | 31,167 | 23,829 | 20,702 | 16,834 | 13,779 |
| On-Site or In-Plant Training - Natural gas sector - Over 10 years (jobs) | | 4,901 | 3,722 | 2,877 | 2,528 | 2,067 | 1,700 |
| On-Site or In-Plant Training - Nuclear sector - None (jobs) | | 8,774 | 9,575 | 8,960 | 9,532 | 8,439 | 7,820 |
| On-Site or In-Plant Training - Nuclear sector - Up to 1 year (jobs) | | 30,147 | 32,931 | 30,843 | 32,840 | 29,099 | 26,986 |
| On-Site or In-Plant Training - Nuclear sector - 1 to 4 years (jobs) | | 7,233 | 7,911 | 7,419 | 7,909 | 7,017 | 6,515 |
| On-Site or In-Plant Training - Nuclear sector - 4 to 10 years (jobs) | | 2,618 | 2,863 | 2,684 | 2,860 | 2,537 | 2,355 |
| On-Site or In-Plant Training - Nuclear sector - Over 10 years (jobs) | | 246 | 268 | 251 | 267 | 237 | 220 |
| On-Site or In-Plant Training - Oil sector - None (jobs) | | 127,666 | 113,154 | 100,522 | 87,241 | 74,055 | 47,738 |
| On-Site or In-Plant Training - Oil sector - Up to 1 year (jobs) | | 502,621 | 448,835 | 401,798 | 351,423 | 300,645 | 195,301 |
| On-Site or In-Plant Training - Oil sector - 1 to 4 years (jobs) | | 116,831 | 104,736 | 94,131 | 82,661 | 71,002 | 46,291 |
| On-Site or In-Plant Training - Oil sector - 4 to 10 years (jobs) | | 41,198 | 37,215 | 33,709 | 29,833 | 25,820 | 16,989 |
| On-Site or In-Plant Training - Oil sector - Over 10 years (jobs) | | 4,563 | 4,197 | 3,868 | 3,480 | 3,059 | 2,041 |
| On-Site or In-Plant Training - Solar PV sector - None (jobs) | | 63,789 | 89,678 | 100,805 | 113,919 | 148,780 | 189,662 |
| On-Site or In-Plant Training - Solar PV sector - Up to 1 year (jobs) | | 218,913 | 308,068 | 345,134 | 389,169 | 508,392 | 646,459 |
| On-Site or In-Plant Training - Solar PV sector - 1 to 4 years (jobs) | | 61,725 | 85,958 | 96,083 | 107,845 | 139,645 | 176,837 |
| On-Site or In-Plant Training - Solar PV sector - 4 to 10 years (jobs) | | 26,490 | 36,347 | 41,053 | 46,259 | 59,318 | 75,579 |
| On-Site or In-Plant Training - Solar PV sector - Over 10 years (jobs) | | 3,169 | 4,408 | 4,943 | 5,560 | 7,198 | 9,140 |
| On-Site or In-Plant Training - Wind sector - None (jobs) | | 39,049 | 67,963 | 88,379 | 112,436 | 152,311 | 208,382 |
| On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) | | 133,088 | 231,095 | 298,252 | 376,902 | 509,192 | 695,643 |
| On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | | 35,695 | 61,703 | 79,798 | 100,893 | 135,732 | 184,456 |
| On-Site or In-Plant Training - Wind sector - 4 to 10 years (jobs) | | 14,432 | 24,998 | 33,283 | 43,093 | 58,227 | 79,049 |
| On-Site or In-Plant Training - Wind sector - Over 10 years (jobs) | | 1,876 | 3,252 | 4,244 | 5,409 | 7,304 | 9,951 |
| Wage income - Biomass (million \$2019) | | 4,420 | 5,498 | 8,852 | 12,487 | 13,042 | 12,804 |
| Wage income - CO2 (million \$2019) | | 449 | 6,820 | 6,032 | 2,966 | 4,552 | 8,531 |
| Wage income - Coal (million \$2019) | | 4,341 | 1,223 | 608 | 536 | 482 | 421 |
| Wage income - Grid (million \$2019) | | 31,505 | 44,329 | 60,462 | 78,508 | 114,854 | 150,222 |
| Wage income - Natural Gas (million \$2019) | | 36,633 | 27,637 | 20,860 | 17,785 | 14,393 | 11,770 |
| Wage income - Nuclear (million \$2019) | | 3,504 | 3,919 | 3,760 | 4,104 | 3,730 | 3,550 |
| Wage income - Oil (million \$2019) | | 52,193 | 47,217 | 42,805 | 37,909 | 32,838 | 21,560 |
| Wage income - Solar (million \$2019) | | 21,062 | 29,939 | 34,156 | 39,184 | 51,909 | 67,323 |
| Wage income - Wind (million \$2019) | | 13,379 | 23,634 | 31,377 | 40,761 | 56,217 | 78,278 |

Table 21: E- scenario - IMPACTS - Fossil fuel industries

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|--------|--------|--------|--------|--------|---------|
| Oil consumption - Annual (million bbls) | | 5,987 | 5,545 | 5,112 | 4,510 | 3,786 | 2,730 |
| Oil consumption - Cumulative (million bbls) | | | | | | | 151,515 |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 5,074 | 4,832 | 3,313 |
| Oil production - Cumulative (million bbls) | | | | | | | 151,997 |
| Natural gas consumption - Annual (tcf) | | 23,207 | 18,132 | 13,835 | 11,458 | 9,451 | 7,359 |
| Natural gas consumption - Cumulative (tcf) | | | | | | | 471,240 |
| Natural gas production - Annual (tcf) | | 36,153 | 32,458 | 26,253 | 21,869 | 19,030 | 16,824 |
| Natural gas production - Cumulative (tcf) | | | | | | | 827,513 |

Table 22: E- scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Final energy use - Transportation (PJ) | 28,030 | 26,603 | 24,463 | 22,703 | 21,315 | 19,677 | 17,739 |
| Final energy use - Residential (PJ) | 11,788 | 11,126 | 10,656 | 10,151 | 9,457 | 8,609 | 7,786 |
| Final energy use - Commercial (PJ) | 9,015 | 8,958 | 8,853 | 8,731 | 8,513 | 8,263 | 8,058 |
| Final energy use - Industry (PJ) | 25,084 | 26,117 | 26,456 | 26,354 | 26,498 | 26,178 | 25,748 |

Table 23: E- scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Electricity distribution capital invested - Cumulative 5-yr (billion \$2018) | | 149 | 150 | 201 | 208 | 298 | 315 |

Table 24: E- scenario - PILLAR 1: Efficiency/Electrification - Transportation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|-------|-------|--------|--------|---------|---------|
| Vehicle sales - Light-duty - EV (%) | 4.05 | 6.4 | 12.6 | 27.1 | 49.7 | 72.9 | 87.9 |
| Vehicle sales - Light-duty - gasoline (%) | 89.4 | 85.5 | 78.4 | 65.1 | 44.7 | 23.9 | 10.6 |
| Vehicle sales - Light-duty - hybrid (%) | 4.99 | 5.79 | 6.54 | 5.88 | 4.34 | 2.52 | 1.21 |
| Vehicle sales - Light-duty - diesel (%) | 1.39 | 1.82 | 2.03 | 1.61 | 1.02 | 0.519 | 0.223 |
| Vehicle sales - Light-duty - hydrogen FC (%) | 0.11 | 0.371 | 0.317 | 0.239 | 0.168 | 0.092 | 0.043 |
| Vehicle sales - Light-duty - other (%) | 0.095 | 0.098 | 0.09 | 0.078 | 0.056 | 0.03 | 0.014 |
| Vehicle sales - Medium-duty - EV (%) | 0.664 | 1.94 | 5.49 | 14.3 | 31.4 | 52.6 | 68 |
| Vehicle sales - Medium-duty - gasoline (%) | 33.8 | 34.7 | 34.7 | 31.9 | 24.4 | 14.2 | 6.33 |
| Vehicle sales - Medium-duty - hybrid (%) | 0.363 | 0.418 | 0.464 | 0.478 | 0.414 | 0.275 | 0.141 |
| Vehicle sales - Medium-duty - diesel (%) | 64.8 | 62.2 | 57.7 | 49.4 | 35.6 | 19.6 | 8.37 |
| Vehicle sales - Medium-duty - hydrogen FC (%) | 0.166 | 0.485 | 1.37 | 3.58 | 7.86 | 13.2 | 17 |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.266 | 0.279 | 0.286 | 0.258 | 0.184 | 0.102 |
| Vehicle sales - Heavy-duty - diesel (%) | 97.4 | 96 | 91.3 | 79.8 | 58.2 | 32.1 | 13.7 |
| Vehicle sales - Heavy-duty - EV (%) | 0.498 | 1.45 | 4.11 | 10.8 | 23.6 | 39.5 | 51 |
| Vehicle sales - Heavy-duty - gasoline (%) | 0.228 | 0.236 | 0.239 | 0.225 | 0.179 | 0.109 | 0.051 |
| Vehicle sales - Heavy-duty - hybrid (%) | 0.083 | 0.094 | 0.104 | 0.107 | 0.092 | 0.06 | 0.03 |
| Vehicle sales - Heavy-duty - hydrogen FC (%) | 0.332 | 0.969 | 2.74 | 7.17 | 15.7 | 26.3 | 34 |
| Vehicle sales - Heavy-duty - other (%) | 1.5 | 1.28 | 1.46 | 1.95 | 2.25 | 1.96 | 1.14 |
| Light-duty vehicle capital costs vs. REF - Cumulative 5-yr (million \$2018) | | 0 | 8,683 | 17,455 | 59,707 | 185,491 | 271,068 |
| Public EV charging plugs - DC Fast (1000 units) | 14.4 | | 31.9 | | 147 | | 402 |
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 766 | | 3,537 | | 9,670 |

Table 25: E- scenario - PILLAR 1: Efficiency/Electrification - Residential

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Sales of space heating units - Electric Heat Pump (%) | 14.6 | 21 | 25.3 | 37.6 | 58.4 | 75.1 | 82.4 |
| Sales of space heating units - Electric Resistance (%) | 20.3 | 24.4 | 23.2 | 19.9 | 14.3 | 10.3 | 8.67 |
| Sales of space heating units - Gas (%) | 55.2 | 40 | 37.7 | 31.1 | 19.6 | 9.59 | 4.95 |
| Sales of space heating units - Fossil (%) | 9.95 | 14.5 | 13.8 | 11.4 | 7.66 | 5.01 | 4.02 |
| Sales of water heating units - Electric Heat Pump (%) | 0 | 1.36 | 5.25 | 16.7 | 35.2 | 49.3 | 55.3 |
| Sales of water heating units - Electric Resistance (%) | 38.4 | 51.5 | 50.3 | 47 | 42.1 | 39.6 | 38.9 |
| Sales of water heating units - Gas Furnace (%) | 58 | 44.5 | 41.9 | 34 | 20.8 | 9.45 | 4.17 |
| Sales of water heating units - Other (%) | 3.58 | 2.63 | 2.51 | 2.27 | 1.91 | 1.68 | 1.62 |
| Sales of cooking units - Electric Resistance (%) | 61.2 | 62.2 | 65.8 | 75.1 | 88.1 | 96.2 | 99 |
| Sales of cooking units - Gas (%) | 38.8 | 37.8 | 34.2 | 24.9 | 11.9 | 3.83 | 1.03 |
| Residential HVAC investment in 2020s vs. REF - Cumulative 5-yr (billion \$2018) | | 252 | 303 | | | | |

Table 26: E- scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-----------|-----------|------|------|-------|-------|
| Sales of space heating units - Electric Heat Pump (%) | 2.95 | 11.9 | 15.9 | 27.6 | 48.1 | 65.9 | 74.2 |
| Sales of space heating units - Electric Resistance (%) | 7.91 | 8.18 | 8.72 | 10.5 | 13.8 | 16.4 | 17.6 |
| Sales of space heating units - Gas (%) | 85.2 | 76.1 | 71.7 | 59 | 36.6 | 17.1 | 7.89 |
| Sales of space heating units - Fossil (%) | 3.94 | 3.79 | 3.71 | 2.91 | 1.53 | 0.589 | 0.302 |
| Sales of water heating units - Electric Heat Pump (%) | 0.385 | 1.8 | 5.78 | 17.4 | 36.6 | 51.2 | 57.3 |
| Sales of water heating units - Electric Resistance (%) | 3.8 | 4.53 | 6.39 | 12 | 21.9 | 30.4 | 34.4 |
| Sales of water heating units - Gas (%) | 94.1 | 92 | 86.2 | 69 | 40.2 | 17.2 | 7.13 |
| Sales of water heating units - Other (%) | 1.66 | 1.67 | 1.66 | 1.51 | 1.31 | 1.18 | 1.14 |
| Sales of cooking units - Electric Resistance (%) | 32.5 | 36.5 | 41.3 | 53.8 | 71.2 | 81.9 | 85.6 |
| Sales of cooking units - Gas (%) | 67.5 | 63.5 | 58.7 | 46.2 | 28.8 | 18.1 | 14.4 |
| Commercial HVAC investment in 2020s - Cumulative 5-yr (million \$2018) | | 1,046,837 | 1,158,815 | | | | |

Table 27: E- scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|---------|---------|---------|---------|---------|-----------|-----------|
| Installed - Onshore wind (MW) | 97,778 | 190,523 | 360,186 | 535,006 | 755,512 | 1,070,110 | 1,512,260 |
| Installed - Offshore wind (MW) | 29.3 | 1,001 | 5,040 | 13,607 | 38,613 | 103,767 | 217,041 |
| Installed - Rooftop PV (MW) | 33,317 | 52,523 | 69,448 | 90,809 | 117,114 | 148,351 | 185,890 |
| Installed - Utility-scale PV (MW) | 36,045 | 127,524 | 299,852 | 482,288 | 684,358 | 989,365 | 1,304,016 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Geothermal (MW) | 2,393 | 2,397 | 2,422 | 2,418 | 2,427 | 2,437 | 2,450 |
| Installed - Nuclear (MW) | 98,481 | 95,135 | 93,041 | 82,240 | 81,173 | 73,631 | 70,690 |
| Installed - Ccgt & gas steam (MW) | 334,698 | 308,455 | 302,510 | 290,709 | 215,137 | 143,639 | 117,846 |
| Installed - Ccgt w cc (MW) | 0 | 0 | 67.8 | 17,456 | 40,085 | 51,995 | 52,067 |
| Installed - Ct (MW) | 146,430 | 140,119 | 132,908 | 111,206 | 98,767 | 148,426 | 241,143 |
| Installed - Biomass (MW) | 10,004 | 9,140 | 7,850 | 6,124 | 4,692 | 3,372 | 2,478 |
| Installed - Biomass w cc (MW) | 0 | 0 | 9,932 | 18,649 | 22,298 | 22,479 | 22,533 |
| Installed - Coal (MW) | 215,962 | 59,668 | 162 | 122 | 55.9 | 42 | 34.5 |
| Installed - Other (MW) | 68,061 | 57,347 | 55,269 | 53,804 | 51,795 | 50,874 | 49,607 |
| Installed - Grid battery storage (MW) | | 989 | 3,715 | 13,014 | 37,934 | 87,773 | 142,016 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |

Table 28: E- scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|
| Onshore wind (TWh) | 412 | 780 | 1,497 | 2,111 | 2,909 | 4,105 | 5,840 |
| Offshore wind (TWh) | 0.092 | 3.66 | 20.4 | 66.3 | 168 | 454 | 902 |
| Rooftop PV (TWh) | 50.1 | 79.4 | 101 | 126 | 164 | 208 | 254 |
| Utility-scale PV (TWh) | 91.1 | 309 | 690 | 1,088 | 1,510 | 2,194 | 2,861 |
| Hydro (TWh) | 300 | 312 | 295 | 294 | 300 | 291 | 292 |
| Geothermal (TWh) | 14.5 | 14.5 | 14.2 | 14.1 | 13.4 | 13.4 | 13.2 |
| Nuclear (TWh) | 802 | 775 | 759 | 671 | 664 | 603 | 580 |
| Gas (TWh) | 1,491 | 1,682 | 1,051 | 443 | 166 | 54.4 | 41.6 |
| Gas w cc (TWh) | 0 | 0 | 0.342 | 110 | 179 | 217 | 178 |
| Biomass (TWh) | 19.1 | 23.2 | 39.7 | 22.2 | 3.11 | 0.406 | 0.051 |
| Biomass w cc (TWh) | 0 | 0 | 73.9 | 139 | 163 | 165 | 149 |
| Coal (TWh) | 979 | 260 | 0.568 | 0.427 | 0.196 | 0.147 | 0.121 |

Table 29: E- scenario - PILLAR 3: Clean fuels - Bioenergy

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - Biopower (1000 tonnes) | 12,353 | 27,983 | 56,287 | 38,442 | 4,029 | 416 | 43.3 |
| Biomass input - Biopower w/ cc (1000 tonnes) | 0 | 0 | 44,659 | 83,709 | 98,070 | 99,590 | 89,779 |
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 143,697 | 365,549 | 383,408 | 381,319 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 103 | 97.2 | 78.2 | 60.2 |
| Biomass input - Bio-FT w/ CC (1000 tonnes) | 0 | 0 | 0 | 148 | 207 | 242 | 231 |
| Biomass input - Pyrolysis liquids (1000 tonnes) | 0 | 0 | 0 | 197 | 5,801 | 5,774 | 3,174 |
| Biomass input - Pyrolysis liquids w/ cc (1000 tonnes) | 0 | 0 | 0 | 160 | 2,119 | 81,909 | 109,355 |
| Biomass input - SNG (1000 tonnes) | 0 | 8.87 | 15.7 | 8.5 | 7.52 | 5.18 | 1.6 |
| Biomass input - Bio-SNG w/ CC (1000 tonnes) | 0 | 0 | 31 | 15.3 | 10.2 | 8.15 | 4.09 |
| Biomass input - Ethanol (1000 tonnes) | 129,506 | 129,506 | 129,536 | 125,006 | 67,634 | 10,261 | 905 |

Table 30: E- scenario - PILLAR 4: CCUS - CO2 storage

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------|------|------|------|------|------|-------|-------|
| Annual (MMT) | 0 | 2.09 | 106 | 453 | 830 | 1,179 | 1,484 |

Table 31: E- scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|----------|
| Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -24,500 |
| Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) | | | | | | | -14,000 |
| Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) | | | | | | | -116,000 |
| Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) | | | | | | | -29,000 |
| Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -100,000 |
| Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -21,000 |
| Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) | | | | | | | -121,000 |
| Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) | | | | | | | -20,000 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - |
| | | | | | | | 505,500 |

Table 31: E- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|----------------|
| Carbon sink potential - Mid - Accelerate regeneration (1000 tCO ₂ e/y) | | | | | | | -36,700 |
| Carbon sink potential - Mid - Avoid deforestation (1000 tCO ₂ e/y) | | | | | | | -49,000 |
| Carbon sink potential - Mid - Extend rotation length (1000 tCO ₂ e/y) | | | | | | | -209,000 |
| Carbon sink potential - Mid - Improve plantations (1000 tCO ₂ e/y) | | | | | | | -42,500 |
| Carbon sink potential - Mid - Increase retention of HWP (1000 tCO ₂ e/y) | | | | | | | - 200,000 |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tCO ₂ e/y) | | | | | | | -40,500 |
| Carbon sink potential - Mid - Reforest cropland (1000 tCO ₂ e/y) | | | | | | | -181,500 |
| Carbon sink potential - Mid - Reforest pasture (1000 tCO ₂ e/y) | | | | | | | -142,000 |
| Carbon sink potential - Mid - Restore productivity (1000 tCO ₂ e/y) | | | | | | | -119,000 |
| Carbon sink potential - Mid - All (not counting overlap) (1000 tCO ₂ e/y) | | | | | | | - 1,020,200 |
| Carbon sink potential - High - Accelerate regeneration (1000 tCO ₂ e/y) | | | | | | | -48,900 |
| Carbon sink potential - High - Avoid deforestation (1000 tCO ₂ e/y) | | | | | | | -84,000 |
| Carbon sink potential - High - Extend rotation length (1000 tCO ₂ e/y) | | | | | | | -302,000 |
| Carbon sink potential - High - Improve plantations (1000 tCO ₂ e/y) | | | | | | | -57,000 |
| Carbon sink potential - High - Increase retention of HWP (1000 tCO ₂ e/y) | | | | | | | - 300,000 |
| Carbon sink potential - High - Increase trees outside forests (1000 tCO ₂ e/y) | | | | | | | -60,000 |
| Carbon sink potential - High - Reforest cropland (1000 tCO ₂ e/y) | | | | | | | -242,000 |
| Carbon sink potential - High - Reforest pasture (1000 tCO ₂ e/y) | | | | | | | - 264,000 |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO ₂ e/y) | | | | | | | - 1,535,900 |
| Carbon sink potential - High - Restore productivity (1000 tCO ₂ e/y) | | | | | | | -178,000 |
| Land impacted for carbon sink potential - Low - Accelerate regeneration (1000 hectares) | | | | | | | 4,000 |
| Land impacted for carbon sink potential - Low - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 10,677 |
| Land impacted for carbon sink potential - Low - Extend rotation length (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 hectares) | | | | | | | 10,500 |
| Land impacted for carbon sink potential - Low - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Low - Increase trees outside forests (1000 hectares) | | | | | | | 3,000 |
| Land impacted for carbon sink potential - Low - Reforest cropland (1000 hectares) | | | | | | | 8,000 |

Table 31: E- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 1,300 |
| Land impacted for carbon sink potential - Low - Restore productivity (1000 hectares) | | | | | | | 35,700 |
| Land impacted for carbon sink potential - Low - Total impacted (over 30 years) (1000 hectares) | | | | | | | 132,177 |
| Land impacted for carbon sink potential - Mid - Accelerate regeneration (1000 hectares) | | | | | | | 6,000 |
| Land impacted for carbon sink potential - Mid - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,025 |
| Land impacted for carbon sink potential - Mid - Extend rotation length (1000 hectares) | | | | | | | 106,500 |
| Land impacted for carbon sink potential - Mid - Improve plantations (1000 hectares) | | | | | | | 15,800 |
| Land impacted for carbon sink potential - Mid - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Mid - Increase trees outside forests (1000 hectares) | | | | | | | 4,350 |
| Land impacted for carbon sink potential - Mid - Reforest cropland (1000 hectares) | | | | | | | 12,000 |
| Land impacted for carbon sink potential - Mid - Reforest pasture (1000 hectares) | | | | | | | 9,400 |
| Land impacted for carbon sink potential - Mid - Restore productivity (1000 hectares) | | | | | | | 71,900 |
| Land impacted for carbon sink potential - Mid - Total impacted (over 30 years) (1000 hectares) | | | | | | | 236,975 |
| Land impacted for carbon sink potential - High - Accelerate regeneration (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - High - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,373 |
| Land impacted for carbon sink potential - High - Extend rotation length (1000 hectares) | | | | | | | 154,000 |
| Land impacted for carbon sink potential - High - Improve plantations (1000 hectares) | | | | | | | 21,000 |
| Land impacted for carbon sink potential - High - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - High - Increase trees outside forests (1000 hectares) | | | | | | | 5,700 |
| Land impacted for carbon sink potential - High - Reforest cropland (1000 hectares) | | | | | | | 16,000 |
| Land impacted for carbon sink potential - High - Reforest pasture (1000 hectares) | | | | | | | 7,500 |
| Land impacted for carbon sink potential - High - Restore productivity (1000 hectares) | | | | | | | 59,000 |

Table 31: E- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - High - Total impacted (over 30 years) (1000 hectares) | | | | | | | 282,573 |

Table 32: E- scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Moderate deployment - Corn-ethanol to energy grasses (1000 tCO ₂ e/y) | | | | | | | -23,286 |
| Carbon sink potential - Moderate deployment - Cropland measures (1000 tCO ₂ e/y) | | | | | | | -106,430 |
| Carbon sink potential - Moderate deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -3,696 |
| Carbon sink potential - Moderate deployment - Total (1000 tCO ₂ e/y) | | | | | | | -133,412 |
| Carbon sink potential - Aggressive deployment - Corn-ethanol to energy grasses (1000 tCO ₂ e/y) | | | | | | | -23,286 |
| Carbon sink potential - Aggressive deployment - Cropland measures (1000 tCO ₂ e/y) | | | | | | | -203,503 |
| Carbon sink potential - Aggressive deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -7,391 |
| Carbon sink potential - Aggressive deployment - Total (1000 tCO ₂ e/y) | | | | | | | -234,180 |
| Land impacted for carbon sink - Moderate deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 11,287 |
| Land impacted for carbon sink - Moderate deployment - Cropland measures (1000 hectares) | | | | | | | 71,390 |
| Land impacted for carbon sink - Moderate deployment - Permanent conservation cover (1000 hectares) | | | | | | | 6,375 |
| Land impacted for carbon sink - Moderate deployment - Total (1000 hectares) | | | | | | | 89,052 |
| Land impacted for carbon sink - Aggressive deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 11,287 |
| Land impacted for carbon sink - Aggressive deployment - Cropland measures (1000 hectares) | | | | | | | 136,405 |
| Land impacted for carbon sink - Aggressive deployment - Permanent conservation cover (1000 hectares) | | | | | | | 12,749 |
| Land impacted for carbon sink - Aggressive deployment - Total (1000 hectares) | | | | | | | 160,442 |

Table 33: E- scenario - PILLAR 6: Land sinks - Total assumed land sink

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|------|-------|-------|
| Total assumed land sink (Gt CO ₂ e/y) | -0.7 | -0.73 | -0.75 | -0.78 | -0.8 | -0.83 | -0.85 |

Table 34: *E+RE+ scenario - IMPACTS - Health*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|--------|--------|--------|--------|-------|
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | | 1,340 | 944 | 524 | 365 | 132 | 38.4 |
| Premature deaths from air pollution - Mobile - On-Road (deaths) | | 11,515 | 10,889 | 8,385 | 4,910 | 2,254 | 876 |
| Premature deaths from air pollution - Gas Stations (deaths) | | 665 | 617 | 470 | 280 | 135 | 61.8 |
| Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | | 2,159 | 1,816 | 1,245 | 700 | 333 | 129 |
| Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | | 554 | 452 | 311 | 182 | 82.3 | 26.9 |
| Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | | 195 | 180 | 142 | 98.2 | 57.5 | 31.2 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 105 | 101 | 96 | 90.9 | 85.7 | 80.1 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 1,436 | 1,305 | 1,006 | 665 | 403 | 222 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 352 | 292 | 221 | 153 | 106 | 73.1 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 170 | 144 | 119 | 94.1 | 69.7 | 46.2 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 87.1 | 41.8 | 41 | 39.9 | 40 | 36.7 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 3,745 | 3,518 | 2,997 | 2,164 | 1,302 | 175 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 22,684 | 29.5 | 28.4 | 24.2 | 16.7 | 1.24 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 11,869 | 8,363 | 4,638 | 3,236 | 1,166 | 340 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 102,386 | 96,814 | 74,557 | 43,657 | 20,044 | 7,790 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 5,886 | 5,467 | 4,160 | 2,477 | 1,197 | 547 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 19,136 | 16,089 | 11,036 | 6,207 | 2,952 | 1,145 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 4,909 | 4,009 | 2,756 | 1,617 | 729 | 238 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 1,731 | 1,592 | 1,261 | 870 | 509 | 277 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 932 | 892 | 850 | 805 | 758 | 709 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 12,710 | 11,555 | 8,907 | 5,887 | 3,569 | 1,962 |

Table 34: *E+RE+ scenario - IMPACTS - Health (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|-------|
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 3,117 | 2,585 | 1,954 | 1,351 | 939 | 647 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 1,502 | 1,275 | 1,054 | 833 | 617 | 409 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 768 | 369 | 362 | 352 | 353 | 324 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 33,258 | 31,238 | 26,617 | 19,218 | 11,561 | 1,556 |

Table 35: *E+RE+ scenario - IMPACTS - Jobs*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| By economic sector - Agriculture (jobs) | | 31,644 | 36,897 | 42,750 | 36,387 | 31,197 | 47,266 |
| By economic sector - Construction (jobs) | | 605,278 | 763,313 | 1,102,749 | 1,323,214 | 1,659,068 | 2,254,415 |
| By economic sector - Manufacturing (jobs) | | 426,798 | 505,648 | 650,059 | 631,426 | 682,593 | 846,742 |
| By economic sector - Mining (jobs) | | 455,199 | 345,035 | 249,121 | 151,098 | 81,299 | 14,201 |
| By economic sector - Other (jobs) | | 61,875 | 92,566 | 154,501 | 200,631 | 276,167 | 415,053 |
| By economic sector - Pipeline (jobs) | | 44,749 | 39,489 | 31,071 | 21,589 | 13,204 | 3,548 |
| By economic sector - Professional (jobs) | | 339,310 | 418,550 | 603,343 | 762,128 | 992,585 | 1,402,224 |
| By economic sector - Trade (jobs) | | 304,934 | 325,742 | 412,281 | 478,783 | 603,141 | 842,546 |
| By economic sector - Utilities (jobs) | | 471,014 | 543,762 | 809,531 | 1,030,060 | 1,328,637 | 1,856,189 |
| By resource sector - Biomass (jobs) | | 81,618 | 89,469 | 102,980 | 105,776 | 117,006 | 212,370 |
| By resource sector - CO2 (jobs) | | 0.001 | 0.013 | 0.011 | 0.016 | 0.02 | 0.012 |
| By resource sector - Coal (jobs) | | 74,788 | 20,480 | 10,819 | 9,345 | 8,380 | 6,937 |
| By resource sector - Grid (jobs) | | 540,768 | 768,703 | 1,367,900 | 1,825,658 | 2,477,933 | 3,562,139 |
| By resource sector - Natural Gas (jobs) | | 540,072 | 429,685 | 313,458 | 255,339 | 172,228 | 130,289 |
| By resource sector - Nuclear (jobs) | | 48,804 | 44,631 | 35,535 | 24,296 | 14,478 | 4,079 |
| By resource sector - Oil (jobs) | | 790,152 | 691,583 | 580,471 | 394,105 | 245,253 | 39,559 |
| By resource sector - Solar (jobs) | | 425,351 | 608,125 | 930,938 | 1,048,923 | 1,341,788 | 1,913,500 |
| By resource sector - Wind (jobs) | | 239,247 | 418,326 | 713,306 | 971,874 | 1,290,825 | 1,813,312 |
| By education level - All sectors - High school diploma or less (jobs) | | 1,142,806 | 1,290,084 | 1,711,593 | 1,942,427 | 2,361,636 | 3,192,382 |
| By education level - All sectors - Associates degree or some college (jobs) | | 822,333 | 937,027 | 1,265,479 | 1,470,489 | 1,818,050 | 2,480,559 |
| By education level - All sectors - Bachelors degree (jobs) | | 607,991 | 659,915 | 840,547 | 947,932 | 1,149,783 | 1,547,827 |
| By education level - All sectors - Masters or professional degree (jobs) | | 146,417 | 160,276 | 206,951 | 238,320 | 293,437 | 399,764 |
| By education level - All sectors - Doctoral degree (jobs) | | 21,252 | 23,700 | 30,835 | 36,148 | 44,983 | 61,653 |
| By education level - Biomass sector - High school diploma or less (jobs) | | 47,358 | 52,271 | 59,779 | 55,811 | 55,334 | 96,306 |
| By education level - Biomass sector - Associates degree or some college (jobs) | | 15,552 | 16,889 | 19,994 | 22,250 | 26,445 | 49,645 |
| By education level - Biomass sector - Bachelors degree (jobs) | | 14,138 | 15,252 | 17,355 | 20,555 | 25,986 | 49,050 |
| By education level - Biomass sector - Masters or professional degree (jobs) | | 3,886 | 4,287 | 4,946 | 5,961 | 7,609 | 14,274 |
| By education level - Biomass sector - Doctoral degree (jobs) | | 685 | 770 | 905 | 1,198 | 1,633 | 3,096 |
| By education level - CO2 sector - High school diploma or less (jobs) | | 0.001 | 0.005 | 0.004 | 0.006 | 0.007 | 0.004 |
| By education level - CO2 sector - Associates degree or some college (jobs) | | 0 | 0.004 | 0.003 | 0.004 | 0.006 | 0.003 |

Table 35: *E+RE+ scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|-----------|-----------|
| By education level - CO2 sector - Bachelors degree (jobs) | | 0 | 0.004 | 0.003 | 0.004 | 0.006 | 0.003 |
| By education level - CO2 sector - Masters or professional degree (jobs) | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| By education level - CO2 sector - Doctoral degree (jobs) | | 0 | 0 | 0 | 0 | 0 | 0 |
| By education level - Coal sector - High school diploma or less (jobs) | | 32,770 | 9,431 | 5,745 | 4,884 | 4,306 | 3,504 |
| By education level - Coal sector - Associates degree or some college (jobs) | | 22,915 | 6,176 | 2,967 | 2,570 | 2,312 | 1,923 |
| By education level - Coal sector - Bachelors degree (jobs) | | 14,923 | 3,797 | 1,687 | 1,511 | 1,405 | 1,200 |
| By education level - Coal sector - Masters or professional degree (jobs) | | 3,640 | 937 | 369 | 332 | 311 | 269 |
| By education level - Coal sector - Doctoral degree (jobs) | | 540 | 139 | 51.4 | 47.7 | 45.9 | 40.7 |
| By education level - Grid sector - High school diploma or less (jobs) | | 229,543 | 327,840 | 586,110 | 785,849 | 1,071,464 | 1,547,179 |
| By education level - Grid sector - Associates degree or some college (jobs) | | 179,507 | 255,090 | 453,770 | 605,380 | 821,310 | 1,180,102 |
| By education level - Grid sector - Bachelors degree (jobs) | | 102,868 | 145,227 | 256,678 | 340,271 | 458,766 | 655,140 |
| By education level - Grid sector - Masters or professional degree (jobs) | | 25,884 | 36,429 | 64,188 | 84,835 | 114,035 | 162,366 |
| By education level - Grid sector - Doctoral degree (jobs) | | 2,966 | 4,117 | 7,153 | 9,323 | 12,358 | 17,351 |
| By education level - Natural gas sector - High school diploma or less (jobs) | | 212,153 | 169,881 | 124,164 | 100,764 | 67,931 | 51,285 |
| By education level - Natural gas sector - Associates degree or some college (jobs) | | 173,454 | 138,732 | 102,315 | 85,093 | 58,524 | 45,741 |
| By education level - Natural gas sector - Bachelors degree (jobs) | | 120,841 | 94,837 | 68,163 | 54,426 | 35,865 | 26,072 |
| By education level - Natural gas sector - Masters or professional degree (jobs) | | 29,607 | 23,107 | 16,579 | 13,286 | 8,767 | 6,406 |
| By education level - Natural gas sector - Doctoral degree (jobs) | | 4,018 | 3,128 | 2,237 | 1,770 | 1,141 | 785 |
| By education level - Nuclear sector - High school diploma or less (jobs) | | 16,542 | 15,172 | 12,114 | 8,306 | 4,963 | 1,402 |
| By education level - Nuclear sector - Associates degree or some college (jobs) | | 13,326 | 12,190 | 9,707 | 6,639 | 3,957 | 1,115 |
| By education level - Nuclear sector - Bachelors degree (jobs) | | 14,405 | 13,145 | 10,444 | 7,126 | 4,237 | 1,191 |
| By education level - Nuclear sector - Masters or professional degree (jobs) | | 3,899 | 3,552 | 2,817 | 1,919 | 1,139 | 320 |
| By education level - Nuclear sector - Doctoral degree (jobs) | | 631 | 573 | 452 | 307 | 181 | 50.7 |
| By education level - Oil sector - High school diploma or less (jobs) | | 317,683 | 280,308 | 237,011 | 162,536 | 102,033 | 16,377 |
| By education level - Oil sector - Associates degree or some college (jobs) | | 205,534 | 180,474 | 151,993 | 103,553 | 64,672 | 10,464 |
| By education level - Oil sector - Bachelors degree (jobs) | | 212,005 | 183,408 | 152,219 | 101,861 | 62,544 | 10,118 |
| By education level - Oil sector - Masters or professional degree (jobs) | | 48,082 | 41,430 | 34,263 | 22,801 | 13,932 | 2,261 |
| By education level - Oil sector - Doctoral degree (jobs) | | 6,849 | 5,963 | 4,985 | 3,354 | 2,073 | 341 |
| By education level - Solar PV sector - High school diploma or less (jobs) | | 190,988 | 270,186 | 409,174 | 455,652 | 576,243 | 812,194 |
| By education level - Solar PV sector - Associates degree or some college (jobs) | | 136,251 | 194,974 | 298,819 | 337,231 | 432,013 | 617,094 |

Table 35: E+RE+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|-----------|-----------|-----------|-----------|-----------|
| By education level - Solar PV sector - Bachelors degree (jobs) | | 76,667 | 111,522 | 173,390 | 198,078 | 257,283 | 372,353 |
| By education level - Solar PV sector - Masters or professional degree (jobs) | | 18,275 | 26,808 | 42,227 | 49,289 | 64,817 | 95,043 |
| By education level - Solar PV sector - Doctoral degree (jobs) | | 3,169 | 4,635 | 7,327 | 8,673 | 11,432 | 16,817 |
| By education level - Wind sector - High school diploma or less (jobs) | | 95,769 | 164,996 | 277,496 | 368,625 | 479,364 | 664,135 |
| By education level - Wind sector - Associates degree or some college (jobs) | | 75,794 | 132,500 | 225,914 | 307,772 | 408,817 | 574,476 |
| By education level - Wind sector - Bachelors degree (jobs) | | 52,145 | 92,727 | 160,611 | 224,104 | 303,697 | 432,703 |
| By education level - Wind sector - Masters or professional degree (jobs) | | 13,144 | 23,727 | 41,562 | 59,898 | 82,826 | 118,826 |
| By education level - Wind sector - Doctoral degree (jobs) | | 2,395 | 4,376 | 7,724 | 11,475 | 16,120 | 23,172 |
| Related work experience - All sectors - None (jobs) | | 388,940 | 438,326 | 582,627 | 668,545 | 819,435 | 1,114,460 |
| Related work experience - All sectors - Up to 1 year (jobs) | | 541,331 | 614,781 | 819,478 | 932,600 | 1,138,238 | 1,548,059 |
| Related work experience - All sectors - 1 to 4 years (jobs) | | 999,573 | 1,112,318 | 1,460,581 | 1,667,981 | 2,038,293 | 2,757,493 |
| Related work experience - All sectors - 4 to 10 years (jobs) | | 637,386 | 712,997 | 941,571 | 1,081,837 | 1,326,415 | 1,796,834 |
| Related work experience - All sectors - Over 10 years (jobs) | | 173,569 | 192,581 | 251,148 | 284,353 | 345,508 | 465,338 |
| Related work experience - Biomass sector - None (jobs) | | 13,859 | 15,184 | 17,335 | 16,944 | 17,786 | 31,692 |
| Related work experience - Biomass sector - Up to 1 year (jobs) | | 27,386 | 29,866 | 33,448 | 30,859 | 30,376 | 53,683 |
| Related work experience - Biomass sector - 1 to 4 years (jobs) | | 24,277 | 26,997 | 31,853 | 34,825 | 40,687 | 73,929 |
| Related work experience - Biomass sector - 4 to 10 years (jobs) | | 12,619 | 13,694 | 16,064 | 18,393 | 22,461 | 42,237 |
| Related work experience - Biomass sector - Over 10 years (jobs) | | 3,478 | 3,729 | 4,280 | 4,755 | 5,696 | 10,830 |
| Related work experience - CO2 sector - None (jobs) | | 0 | 0.002 | 0.002 | 0.002 | 0.003 | 0.002 |
| Related work experience - CO2 sector - Up to 1 year (jobs) | | 0 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 |
| Related work experience - CO2 sector - 1 to 4 years (jobs) | | 0.001 | 0.005 | 0.004 | 0.006 | 0.008 | 0.004 |
| Related work experience - CO2 sector - 4 to 10 years (jobs) | | 0 | 0.003 | 0.003 | 0.004 | 0.005 | 0.003 |
| Related work experience - CO2 sector - Over 10 years (jobs) | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| Related work experience - Coal sector - None (jobs) | | 10,136 | 2,723 | 1,346 | 1,162 | 1,042 | 862 |
| Related work experience - Coal sector - Up to 1 year (jobs) | | 15,483 | 4,463 | 2,741 | 2,347 | 2,085 | 1,710 |
| Related work experience - Coal sector - 1 to 4 years (jobs) | | 28,389 | 7,771 | 4,137 | 3,566 | 3,191 | 2,634 |
| Related work experience - Coal sector - 4 to 10 years (jobs) | | 16,591 | 4,383 | 2,034 | 1,778 | 1,613 | 1,351 |
| Related work experience - Coal sector - Over 10 years (jobs) | | 4,189 | 1,141 | 561 | 493 | 449 | 379 |
| Related work experience - Grid sector - None (jobs) | | 80,320 | 114,262 | 203,472 | 271,742 | 369,058 | 530,838 |
| Related work experience - Grid sector - Up to 1 year (jobs) | | 103,541 | 147,634 | 263,519 | 352,790 | 480,323 | 692,640 |

Table 35: *E+RE+ scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Related work experience - Grid sector - 1 to 4 years (jobs) | | 195,544 | 277,751 | 493,872 | 658,635 | 893,268 | 1,283,132 |
| Related work experience - Grid sector - 4 to 10 years (jobs) | | 128,147 | 181,887 | 323,176 | 430,672 | 583,658 | 837,760 |
| Related work experience - Grid sector - Over 10 years (jobs) | | 33,216 | 47,171 | 83,860 | 111,818 | 151,627 | 217,769 |
| Related work experience - Natural gas sector - None (jobs) | | 78,199 | 62,490 | 45,890 | 37,795 | 25,770 | 19,842 |
| Related work experience - Natural gas sector - Up to 1 year (jobs) | | 93,942 | 74,664 | 54,280 | 43,954 | 29,562 | 22,336 |
| Related work experience - Natural gas sector - 1 to 4 years (jobs) | | 199,314 | 158,500 | 115,534 | 93,908 | 63,139 | 47,424 |
| Related work experience - Natural gas sector - 4 to 10 years (jobs) | | 132,613 | 105,533 | 77,155 | 63,183 | 42,812 | 32,649 |
| Related work experience - Natural gas sector - Over 10 years (jobs) | | 36,004 | 28,497 | 20,599 | 16,500 | 10,944 | 8,038 |
| Related work experience - Nuclear sector - None (jobs) | | 6,152 | 5,632 | 4,489 | 3,072 | 1,832 | 517 |
| Related work experience - Nuclear sector - Up to 1 year (jobs) | | 8,981 | 8,218 | 6,547 | 4,479 | 2,671 | 753 |
| Related work experience - Nuclear sector - 1 to 4 years (jobs) | | 18,216 | 16,653 | 13,254 | 9,059 | 5,397 | 1,520 |
| Related work experience - Nuclear sector - 4 to 10 years (jobs) | | 11,818 | 10,801 | 8,595 | 5,873 | 3,498 | 985 |
| Related work experience - Nuclear sector - Over 10 years (jobs) | | 3,638 | 3,327 | 2,649 | 1,812 | 1,080 | 304 |
| Related work experience - Oil sector - None (jobs) | | 106,478 | 93,499 | 78,696 | 53,672 | 33,526 | 5,380 |
| Related work experience - Oil sector - Up to 1 year (jobs) | | 147,314 | 128,836 | 107,956 | 73,363 | 45,636 | 7,249 |
| Related work experience - Oil sector - 1 to 4 years (jobs) | | 301,109 | 263,650 | 221,423 | 150,297 | 93,538 | 15,160 |
| Related work experience - Oil sector - 4 to 10 years (jobs) | | 182,706 | 159,719 | 133,934 | 90,747 | 56,384 | 9,131 |
| Related work experience - Oil sector - Over 10 years (jobs) | | 52,545 | 45,879 | 38,462 | 26,026 | 16,169 | 2,639 |
| Related work experience - Solar PV sector - None (jobs) | | 61,229 | 87,655 | 134,515 | 152,231 | 195,318 | 279,510 |
| Related work experience - Solar PV sector - Up to 1 year (jobs) | | 95,152 | 135,260 | 205,798 | 230,250 | 292,602 | 414,419 |
| Related work experience - Solar PV sector - 1 to 4 years (jobs) | | 147,770 | 211,937 | 325,535 | 368,232 | 472,718 | 676,604 |
| Related work experience - Solar PV sector - 4 to 10 years (jobs) | | 96,156 | 137,413 | 210,348 | 237,177 | 303,353 | 432,563 |
| Related work experience - Solar PV sector - Over 10 years (jobs) | | 25,043 | 35,861 | 54,742 | 61,033 | 77,797 | 110,405 |
| Related work experience - Wind sector - None (jobs) | | 32,568 | 56,881 | 96,886 | 131,926 | 175,104 | 245,819 |
| Related work experience - Wind sector - Up to 1 year (jobs) | | 49,532 | 85,840 | 145,188 | 194,559 | 254,984 | 355,268 |
| Related work experience - Wind sector - 1 to 4 years (jobs) | | 84,954 | 149,059 | 254,972 | 349,459 | 466,356 | 657,092 |
| Related work experience - Wind sector - 4 to 10 years (jobs) | | 56,737 | 99,569 | 170,265 | 234,013 | 312,635 | 440,159 |
| Related work experience - Wind sector - Over 10 years (jobs) | | 15,456 | 26,976 | 45,995 | 61,917 | 81,746 | 114,974 |
| On-the-Job Training - All sectors - None (jobs) | | 153,262 | 170,093 | 221,633 | 251,693 | 307,327 | 417,213 |
| On-the-Job Training - All sectors - Up to 1 year (jobs) | | 1,835,406 | 2,045,226 | 2,680,382 | 3,040,524 | 3,700,938 | 5,007,322 |

Table 35: *E+RE+ scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|-----------|-----------|-----------|
| On-the-Job Training - All sectors - 1 to 4 years (jobs) | | 557,718 | 631,274 | 846,215 | 980,167 | 1,207,641 | 1,640,320 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 167,721 | 194,172 | 267,537 | 318,571 | 398,596 | 545,983 |
| On-the-Job Training - All sectors - Over 10 years (jobs) | | 26,692 | 30,236 | 39,638 | 44,359 | 53,387 | 71,346 |
| On-the-Job Training - Biomass sector - None (jobs) | | 5,066 | 5,387 | 5,981 | 6,164 | 6,923 | 12,884 |
| On-the-Job Training - Biomass sector - Up to 1 year (jobs) | | 64,933 | 71,327 | 81,346 | 81,677 | 88,415 | 158,798 |
| On-the-Job Training - Biomass sector - 1 to 4 years (jobs) | | 8,979 | 9,877 | 12,031 | 13,677 | 16,440 | 30,702 |
| On-the-Job Training - Biomass sector - 4 to 10 years (jobs) | | 2,054 | 2,258 | 2,913 | 3,534 | 4,432 | 8,465 |
| On-the-Job Training - Biomass sector - Over 10 years (jobs) | | 586 | 619 | 708 | 722 | 796 | 1,521 |
| On-the-Job Training - CO2 sector - None (jobs) | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| On-the-Job Training - CO2 sector - Up to 1 year (jobs) | | 0.001 | 0.009 | 0.008 | 0.011 | 0.014 | 0.008 |
| On-the-Job Training - CO2 sector - 1 to 4 years (jobs) | | 0 | 0.002 | 0.002 | 0.003 | 0.004 | 0.002 |
| On-the-Job Training - CO2 sector - 4 to 10 years (jobs) | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| On-the-Job Training - CO2 sector - Over 10 years (jobs) | | 0 | 0 | 0 | 0 | 0 | 0 |
| On-the-Job Training - Coal sector - None (jobs) | | 3,704 | 973 | 503 | 441 | 401 | 336 |
| On-the-Job Training - Coal sector - Up to 1 year (jobs) | | 51,515 | 14,229 | 7,928 | 6,850 | 6,142 | 5,081 |
| On-the-Job Training - Coal sector - 1 to 4 years (jobs) | | 14,738 | 4,014 | 1,898 | 1,635 | 1,463 | 1,211 |
| On-the-Job Training - Coal sector - 4 to 10 years (jobs) | | 4,330 | 1,125 | 419 | 357 | 316 | 258 |
| On-the-Job Training - Coal sector - Over 10 years (jobs) | | 500 | 139 | 70 | 62.4 | 57.8 | 49.6 |
| On-the-Job Training - Grid sector - None (jobs) | | 26,465 | 37,568 | 66,764 | 88,994 | 120,647 | 173,240 |
| On-the-Job Training - Grid sector - Up to 1 year (jobs) | | 347,209 | 493,367 | 877,616 | 1,170,892 | 1,588,698 | 2,283,097 |
| On-the-Job Training - Grid sector - 1 to 4 years (jobs) | | 121,475 | 172,811 | 307,739 | 411,002 | 558,200 | 802,913 |
| On-the-Job Training - Grid sector - 4 to 10 years (jobs) | | 41,285 | 58,785 | 104,776 | 140,057 | 190,382 | 274,077 |
| On-the-Job Training - Grid sector - Over 10 years (jobs) | | 4,334 | 6,172 | 11,003 | 14,713 | 20,006 | 28,812 |
| On-the-Job Training - Natural gas sector - None (jobs) | | 28,179 | 22,136 | 15,903 | 12,710 | 8,434 | 6,257 |
| On-the-Job Training - Natural gas sector - Up to 1 year (jobs) | | 348,610 | 276,866 | 201,297 | 162,788 | 108,882 | 81,003 |
| On-the-Job Training - Natural gas sector - 1 to 4 years (jobs) | | 119,696 | 95,608 | 70,226 | 57,982 | 39,688 | 30,848 |
| On-the-Job Training - Natural gas sector - 4 to 10 years (jobs) | | 38,459 | 31,003 | 23,091 | 19,510 | 13,659 | 11,015 |
| On-the-Job Training - Natural gas sector - Over 10 years (jobs) | | 5,129 | 4,071 | 2,940 | 2,350 | 1,565 | 1,166 |
| On-the-Job Training - Nuclear sector - None (jobs) | | 3,278 | 2,996 | 2,385 | 1,630 | 971 | 273 |
| On-the-Job Training - Nuclear sector - Up to 1 year (jobs) | | 33,291 | 30,433 | 24,221 | 16,555 | 9,861 | 2,777 |

Table 35: *E+RE+ scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) | | 9,449 | 8,650 | 6,894 | 4,719 | 2,815 | 794 |
| On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) | | 2,279 | 2,086 | 1,663 | 1,138 | 679 | 192 |
| On-the-Job Training - Nuclear sector - Over 10 years (jobs) | | 508 | 465 | 371 | 254 | 152 | 42.8 |
| On-the-Job Training - Oil sector - None (jobs) | | 48,074 | 41,427 | 34,202 | 22,869 | 14,003 | 2,203 |
| On-the-Job Training - Oil sector - Up to 1 year (jobs) | | 556,332 | 486,861 | 408,582 | 277,346 | 172,564 | 27,863 |
| On-the-Job Training - Oil sector - 1 to 4 years (jobs) | | 144,018 | 126,388 | 106,403 | 72,405 | 45,178 | 7,322 |
| On-the-Job Training - Oil sector - 4 to 10 years (jobs) | | 34,014 | 30,133 | 25,578 | 17,598 | 11,082 | 1,779 |
| On-the-Job Training - Oil sector - Over 10 years (jobs) | | 7,714 | 6,774 | 5,705 | 3,886 | 2,427 | 392 |
| On-the-Job Training - Solar PV sector - None (jobs) | | 25,063 | 36,002 | 55,496 | 63,222 | 81,466 | 117,099 |
| On-the-Job Training - Solar PV sector - Up to 1 year (jobs) | | 274,840 | 394,603 | 605,538 | 681,977 | 874,494 | 1,249,579 |
| On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) | | 89,960 | 127,732 | 194,510 | 218,555 | 278,071 | 394,550 |
| On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) | | 30,318 | 42,515 | 64,473 | 73,183 | 92,757 | 131,383 |
| On-the-Job Training - Solar PV sector - Over 10 years (jobs) | | 5,169 | 7,274 | 10,921 | 11,986 | 15,000 | 20,888 |
| On-the-Job Training - Wind sector - None (jobs) | | 13,433 | 23,602 | 40,399 | 55,663 | 74,483 | 104,921 |
| On-the-Job Training - Wind sector - Up to 1 year (jobs) | | 158,676 | 277,541 | 473,853 | 642,440 | 851,882 | 1,199,124 |
| On-the-Job Training - Wind sector - 1 to 4 years (jobs) | | 49,403 | 86,192 | 146,514 | 200,192 | 265,787 | 371,980 |
| On-the-Job Training - Wind sector - 4 to 10 years (jobs) | | 14,982 | 26,267 | 44,622 | 63,193 | 85,289 | 118,813 |
| On-the-Job Training - Wind sector - Over 10 years (jobs) | | 2,752 | 4,723 | 7,918 | 10,386 | 13,384 | 18,475 |
| On-Site or In-Plant Training - All sectors - None (jobs) | | 442,649 | 497,923 | 658,253 | 753,566 | 923,287 | 1,254,464 |
| On-Site or In-Plant Training - All sectors - Up to 1 year (jobs) | | 1,663,249 | 1,852,974 | 2,430,243 | 2,759,011 | 3,359,976 | 4,546,380 |
| On-Site or In-Plant Training - All sectors - 1 to 4 years (jobs) | | 436,081 | 492,734 | 658,484 | 759,621 | 933,680 | 1,266,660 |
| On-Site or In-Plant Training - All sectors - 4 to 10 years (jobs) | | 177,221 | 202,264 | 273,876 | 322,416 | 400,328 | 545,375 |
| On-Site or In-Plant Training - All sectors - Over 10 years (jobs) | | 21,600 | 25,107 | 34,549 | 40,702 | 50,618 | 69,305 |
| On-Site or In-Plant Training - Biomass sector - None (jobs) | | 13,142 | 14,575 | 17,029 | 18,260 | 20,980 | 37,999 |
| On-Site or In-Plant Training - Biomass sector - Up to 1 year (jobs) | | 57,121 | 62,494 | 71,072 | 71,076 | 76,689 | 138,249 |
| On-Site or In-Plant Training - Biomass sector - 1 to 4 years (jobs) | | 8,227 | 9,032 | 10,798 | 11,784 | 13,705 | 25,340 |
| On-Site or In-Plant Training - Biomass sector - 4 to 10 years (jobs) | | 2,556 | 2,763 | 3,401 | 3,988 | 4,919 | 9,426 |
| On-Site or In-Plant Training - Biomass sector - Over 10 years (jobs) | | 572 | 605 | 679 | 668 | 712 | 1,355 |
| On-Site or In-Plant Training - CO2 sector - None (jobs) | | 0 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 |
| On-Site or In-Plant Training - CO2 sector - Up to 1 year (jobs) | | 0.001 | 0.008 | 0.007 | 0.01 | 0.012 | 0.007 |

Table 35: *E+RE+ scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|-----------|-----------|-----------|
| On-Site or In-Plant Training - CO2 sector - 1 to 4 years (jobs) | | 0 | 0.002 | 0.002 | 0.002 | 0.003 | 0.002 |
| On-Site or In-Plant Training - CO2 sector - 4 to 10 years (jobs) | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| On-Site or In-Plant Training - CO2 sector - Over 10 years (jobs) | | 0 | 0 | 0 | 0 | 0 | 0 |
| On-Site or In-Plant Training - Coal sector - None (jobs) | | 10,986 | 2,917 | 1,406 | 1,239 | 1,134 | 957 |
| On-Site or In-Plant Training - Coal sector - Up to 1 year (jobs) | | 47,210 | 13,101 | 7,354 | 6,336 | 5,665 | 4,674 |
| On-Site or In-Plant Training - Coal sector - 1 to 4 years (jobs) | | 11,633 | 3,188 | 1,585 | 1,363 | 1,217 | 1,005 |
| On-Site or In-Plant Training - Coal sector - 4 to 10 years (jobs) | | 4,427 | 1,140 | 427 | 366 | 326 | 268 |
| On-Site or In-Plant Training - Coal sector - Over 10 years (jobs) | | 532 | 135 | 47 | 41.4 | 38 | 32.2 |
| On-Site or In-Plant Training - Grid sector - None (jobs) | | 82,350 | 116,798 | 207,385 | 276,186 | 374,066 | 536,612 |
| On-Site or In-Plant Training - Grid sector - Up to 1 year (jobs) | | 318,680 | 453,033 | 806,225 | 1,076,112 | 1,460,722 | 2,100,066 |
| On-Site or In-Plant Training - Grid sector - 1 to 4 years (jobs) | | 93,401 | 132,938 | 236,853 | 316,488 | 430,052 | 618,898 |
| On-Site or In-Plant Training - Grid sector - 4 to 10 years (jobs) | | 41,021 | 58,372 | 103,975 | 138,899 | 188,692 | 271,479 |
| On-Site or In-Plant Training - Grid sector - Over 10 years (jobs) | | 5,317 | 7,562 | 13,462 | 17,973 | 24,400 | 35,083 |
| On-Site or In-Plant Training - Natural gas sector - None (jobs) | | 85,997 | 68,068 | 49,491 | 40,303 | 27,179 | 20,634 |
| On-Site or In-Plant Training - Natural gas sector - Up to 1 year (jobs) | | 317,869 | 252,506 | 183,598 | 148,507 | 99,407 | 74,103 |
| On-Site or In-Plant Training - Natural gas sector - 1 to 4 years (jobs) | | 91,008 | 72,717 | 53,365 | 43,919 | 29,964 | 23,136 |
| On-Site or In-Plant Training - Natural gas sector - 4 to 10 years (jobs) | | 40,405 | 32,509 | 24,091 | 20,136 | 13,945 | 11,033 |
| On-Site or In-Plant Training - Natural gas sector - Over 10 years (jobs) | | 4,794 | 3,885 | 2,913 | 2,474 | 1,732 | 1,384 |
| On-Site or In-Plant Training - Nuclear sector - None (jobs) | | 8,736 | 7,981 | 6,348 | 4,336 | 2,581 | 727 |
| On-Site or In-Plant Training - Nuclear sector - Up to 1 year (jobs) | | 30,016 | 27,447 | 21,851 | 14,939 | 8,901 | 2,508 |
| On-Site or In-Plant Training - Nuclear sector - 1 to 4 years (jobs) | | 7,202 | 6,594 | 5,256 | 3,598 | 2,146 | 605 |
| On-Site or In-Plant Training - Nuclear sector - 4 to 10 years (jobs) | | 2,607 | 2,386 | 1,901 | 1,301 | 776 | 219 |
| On-Site or In-Plant Training - Nuclear sector - Over 10 years (jobs) | | 244 | 223 | 178 | 122 | 72.4 | 20.4 |
| On-Site or In-Plant Training - Oil sector - None (jobs) | | 127,228 | 110,514 | 92,040 | 61,993 | 38,270 | 6,123 |
| On-Site or In-Plant Training - Oil sector - Up to 1 year (jobs) | | 500,887 | 438,320 | 367,823 | 249,700 | 155,369 | 25,065 |
| On-Site or In-Plant Training - Oil sector - 1 to 4 years (jobs) | | 116,435 | 102,317 | 86,241 | 58,766 | 36,712 | 5,954 |
| On-Site or In-Plant Training - Oil sector - 4 to 10 years (jobs) | | 41,055 | 36,334 | 30,828 | 21,174 | 13,322 | 2,156 |
| On-Site or In-Plant Training - Oil sector - Over 10 years (jobs) | | 4,547 | 4,098 | 3,539 | 2,472 | 1,580 | 261 |
| On-Site or In-Plant Training - Solar PV sector - None (jobs) | | 72,537 | 103,988 | 159,601 | 180,293 | 231,221 | 330,565 |
| On-Site or In-Plant Training - Solar PV sector - Up to 1 year (jobs) | | 249,259 | 357,492 | 548,218 | 617,371 | 791,134 | 1,129,844 |

Table 35: *E+RE+ scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|-----------|
| On-Site or In-Plant Training - Solar PV sector - 1 to 4 years (jobs) | | 70,100 | 99,606 | 151,718 | 170,383 | 216,840 | 307,724 |
| On-Site or In-Plant Training - Solar PV sector - 4 to 10 years (jobs) | | 29,859 | 41,935 | 63,621 | 72,114 | 91,431 | 129,506 |
| On-Site or In-Plant Training - Solar PV sector - Over 10 years (jobs) | | 3,595 | 5,104 | 7,780 | 8,763 | 11,162 | 15,861 |
| On-Site or In-Plant Training - Wind sector - None (jobs) | | 41,673 | 73,080 | 124,952 | 170,956 | 227,855 | 320,848 |
| On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) | | 142,207 | 248,582 | 424,101 | 574,971 | 762,089 | 1,071,871 |
| On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | | 38,076 | 66,342 | 112,670 | 153,321 | 203,044 | 283,998 |
| On-Site or In-Plant Training - Wind sector - 4 to 10 years (jobs) | | 15,291 | 26,826 | 45,632 | 64,437 | 86,916 | 121,287 |
| On-Site or In-Plant Training - Wind sector - Over 10 years (jobs) | | 1,999 | 3,495 | 5,952 | 8,189 | 10,921 | 15,308 |
| Wage income - Biomass (million \$2019) | | 4,220 | 4,744 | 5,634 | 6,202 | 7,310 | 13,618 |
| Wage income - CO2 (million \$2019) | | 0 | 0.001 | 0.001 | 0.001 | 0.002 | 0.001 |
| Wage income - Coal (million \$2019) | | 4,510 | 1,225 | 602 | 528 | 482 | 406 |
| Wage income - Grid (million \$2019) | | 33,819 | 48,716 | 87,884 | 118,958 | 163,816 | 239,026 |
| Wage income - Natural Gas (million \$2019) | | 35,783 | 28,853 | 21,290 | 17,465 | 11,852 | 8,946 |
| Wage income - Nuclear (million \$2019) | | 3,489 | 3,266 | 2,664 | 1,867 | 1,141 | 330 |
| Wage income - Oil (million \$2019) | | 52,019 | 46,147 | 39,272 | 26,986 | 17,009 | 2,804 |
| Wage income - Solar (million \$2019) | | 23,931 | 34,700 | 53,960 | 61,913 | 80,598 | 117,098 |
| Wage income - Wind (million \$2019) | | 14,261 | 25,404 | 44,115 | 61,776 | 84,062 | 120,435 |

Table 36: *E+RE+ scenario - IMPACTS - Fossil fuel industries*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|--------|--------|--------|--------|--------|---------|
| Oil consumption - Annual (million bbls) | | 5,925 | 5,139 | 3,984 | 2,776 | 1,608 | 0.837 |
| Oil consumption - Cumulative (million bbls) | | | | | | | 115,785 |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,078 | 3,797 | 2,654 | 583 |
| Oil production - Cumulative (million bbls) | | | | | | | 125,883 |
| Natural gas consumption - Annual (tcf) | | 22,299 | 18,474 | 12,539 | 8,059 | 4,669 | 3,040 |
| Natural gas consumption - Cumulative (tcf) | | | | | | | 408,044 |
| Natural gas production - Annual (tcf) | | 35,349 | 33,543 | 27,543 | 22,024 | 15,809 | 9,807 |
| Natural gas production - Cumulative (tcf) | | | | | | | 798,868 |

Table 37: *E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Overview*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Final energy use - Transportation (PJ) | 27,996 | 26,390 | 23,464 | 19,872 | 16,608 | 14,565 | 13,649 |
| Final energy use - Residential (PJ) | 11,788 | 11,090 | 10,221 | 8,966 | 7,776 | 6,967 | 6,512 |
| Final energy use - Commercial (PJ) | 9,015 | 8,942 | 8,619 | 8,103 | 7,608 | 7,344 | 7,297 |
| Final energy use - Industry (PJ) | 25,107 | 26,056 | 26,110 | 25,372 | 25,108 | 24,870 | 24,572 |

Table 38: *E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Electricity demand*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Electricity distribution capital invested - Cumulative 5-yr (billion \$2018) | | 182 | 187 | 336 | 359 | 314 | 329 |

Table 39: *E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Transportation*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|-------|-------|------|
| Vehicle sales - Light-duty - EV (%) | 4.41 | 16.7 | 48.7 | 82.7 | 96.4 | 99.3 | 100 |
| Vehicle sales - Light-duty - gasoline (%) | 89.1 | 76.3 | 46.4 | 15.6 | 3.17 | 0.586 | 0 |
| Vehicle sales - Light-duty - hybrid (%) | 4.91 | 4.89 | 3.38 | 1.24 | 0.304 | 0.067 | 0 |

Table 39: *E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Transportation (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|---------|---------|---------|---------|---------|
| Vehicle sales - Light-duty - diesel (%) | 1.4 | 1.68 | 1.2 | 0.382 | 0.072 | 0.013 | 0 |
| Vehicle sales - Light-duty - hydrogen FC (%) | 0.11 | 0.331 | 0.191 | 0.059 | 0.012 | 0.002 | 0 |
| Vehicle sales - Light-duty - other (%) | 0.095 | 0.091 | 0.058 | 0.02 | 0.004 | 0.001 | 0 |
| Vehicle sales - Medium-duty - EV (%) | 0.784 | 5.07 | 25.3 | 60.8 | 76.5 | 79.5 | 80 |
| Vehicle sales - Medium-duty - gasoline (%) | 33.7 | 33.3 | 25.5 | 9.32 | 1.77 | 0.277 | 0 |
| Vehicle sales - Medium-duty - hybrid (%) | 0.363 | 0.402 | 0.341 | 0.14 | 0.03 | 0.005 | 0 |
| Vehicle sales - Medium-duty - diesel (%) | 64.7 | 59.7 | 42.3 | 14.4 | 2.59 | 0.384 | 0 |
| Vehicle sales - Medium-duty - hydrogen FC (%) | 0.196 | 1.27 | 6.33 | 15.2 | 19.1 | 19.9 | 20 |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.255 | 0.205 | 0.083 | 0.019 | 0.004 | 0 |
| Vehicle sales - Heavy-duty - diesel (%) | 97.2 | 92.1 | 67 | 23.3 | 4.22 | 0.628 | 0 |
| Vehicle sales - Heavy-duty - EV (%) | 0.588 | 3.81 | 19 | 45.6 | 57.4 | 59.6 | 60 |
| Vehicle sales - Heavy-duty - gasoline (%) | 0.227 | 0.227 | 0.176 | 0.066 | 0.013 | 0.002 | 0 |
| Vehicle sales - Heavy-duty - hybrid (%) | 0.082 | 0.09 | 0.077 | 0.031 | 0.007 | 0.001 | 0 |
| Vehicle sales - Heavy-duty - hydrogen FC (%) | 0.392 | 2.54 | 12.7 | 30.4 | 38.2 | 39.7 | 40 |
| Vehicle sales - Heavy-duty - other (%) | 1.5 | 1.23 | 1.07 | 0.568 | 0.163 | 0.038 | 0 |
| Light-duty vehicle capital costs vs. REF - Cumulative 5-yr (million \$2018) | | 51,477 | 133,974 | 213,805 | 325,180 | 352,492 | 336,852 |
| Public EV charging plugs - DC Fast (1000 units) | 14.4 | | 93.9 | | 391 | | 628 |
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 2,256 | | 9,394 | | 15,098 |

Table 40: *E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Residential*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|-------|-------|-------|------|
| Sales of space heating units - Electric Heat Pump (%) | 14.6 | 27.2 | 64.4 | 85 | 88 | 88.1 | 88.1 |
| Sales of space heating units - Electric Resistance (%) | 20.3 | 22.6 | 12.3 | 8.07 | 7.57 | 7.66 | 7.68 |
| Sales of space heating units - Gas (%) | 55.2 | 36.9 | 17.1 | 3.52 | 1.45 | 1.32 | 1.3 |
| Sales of space heating units - Fossil (%) | 9.95 | 13.2 | 6.18 | 3.41 | 3.02 | 2.91 | 2.9 |
| Sales of water heating units - Electric Heat Pump (%) | 0 | 7.44 | 41.8 | 56.2 | 58.5 | 59.2 | 59 |
| Sales of water heating units - Electric Resistance (%) | 38.4 | 49.2 | 38.5 | 39.8 | 39.9 | 39.3 | 39.5 |
| Sales of water heating units - Gas Furnace (%) | 58 | 40.9 | 18 | 2.56 | 0.155 | 0.003 | 0 |
| Sales of water heating units - Other (%) | 3.58 | 2.47 | 1.63 | 1.47 | 1.51 | 1.54 | 1.53 |
| Sales of cooking units - Electric Resistance (%) | 61.3 | 69.6 | 94.8 | 99.7 | 100 | 100 | 100 |
| Sales of cooking units - Gas (%) | 38.7 | 30.4 | 5.2 | 0.262 | 0 | 0 | 0 |
| Residential HVAC investment in 2020s vs. REF - Cumulative 5-yr (billion \$2018) | | 254 | 307 | | | | |

Table 41: *E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Commercial*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|------|-------|-------|-------|-------|-------|
| Sales of space heating units - Electric Heat Pump (%) | 2.95 | 17.6 | 52.9 | 76.9 | 80.6 | 80.8 | 80.8 |
| Sales of space heating units - Electric Resistance (%) | 7.91 | 9.07 | 14.4 | 17.7 | 18.4 | 18.4 | 18.4 |
| Sales of space heating units - Gas (%) | 85.2 | 70.1 | 32.1 | 5.37 | 1.07 | 0.82 | 0.817 |
| Sales of space heating units - Fossil (%) | 3.94 | 3.28 | 0.655 | 0.028 | 0 | 0 | 0 |
| Sales of water heating units - Electric Heat Pump (%) | 0.385 | 7.96 | 43.3 | 59.2 | 61.2 | 61.3 | 61.3 |
| Sales of water heating units - Electric Resistance (%) | 3.8 | 7.16 | 24 | 35.7 | 37.5 | 37.6 | 37.6 |
| Sales of water heating units - Gas (%) | 94.1 | 83.3 | 31.5 | 4.03 | 0.235 | 0.003 | 0 |

Table 41: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Commercial (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|------|------|------|------|
| Sales of water heating units - Other (%) | 1.66 | 1.59 | 1.2 | 1.1 | 1.1 | 1.11 | 1.11 |
| Sales of cooking units - Electric Resistance (%) | 32.5 | 46.4 | 80 | 86.6 | 87 | 87 | 87 |
| Sales of cooking units - Gas (%) | 67.5 | 53.6 | 20 | 13.4 | 13 | 13 | 13 |
| Commercial HVAC investment in 2020s - Cumulative 5-yr (million \$2018) | | 1,047,657 | 1,162,511 | | | | |

Table 42: E+RE+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|---------|---------|---------|---------|-----------|-----------|-----------|
| Installed - Onshore wind (MW) | 97,803 | 200,500 | 386,229 | 693,913 | 1,069,220 | 1,521,230 | 2,186,500 |
| Installed - Offshore wind (MW) | 29.3 | 1,026 | 4,957 | 36,176 | 99,902 | 227,465 | 457,951 |
| Installed - Rooftop PV (MW) | 33,317 | 52,523 | 69,448 | 90,809 | 117,114 | 148,351 | 185,890 |
| Installed - Utility-scale PV (MW) | 35,099 | 150,447 | 361,210 | 725,568 | 1,120,211 | 1,665,399 | 2,454,547 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Geothermal (MW) | 2,390 | 2,394 | 2,414 | 2,426 | 2,428 | 2,457 | 4,871 |
| Installed - Nuclear (MW) | 98,501 | 94,063 | 83,809 | 56,742 | 41,522 | 14,825 | 0 |
| Installed - Ccgt & gas steam (MW) | 334,781 | 312,898 | 343,874 | 346,127 | 273,137 | 203,281 | 171,091 |
| Installed - Ccgt w cc (MW) | 0 | 0 | 77.3 | 164 | 233 | 304 | 331 |
| Installed - Ct (MW) | 146,242 | 137,398 | 142,744 | 165,901 | 204,190 | 319,096 | 515,962 |
| Installed - Biomass (MW) | 10,003 | 9,140 | 7,854 | 6,156 | 4,735 | 3,409 | 2,488 |
| Installed - Biomass w cc (MW) | 0 | 0 | 29.9 | 54.6 | 85.8 | 108 | 150 |
| Installed - Coal (MW) | 216,076 | 60,056 | 185 | 104 | 84.5 | 61 | 26.1 |
| Installed - Other (MW) | 68,093 | 57,211 | 55,709 | 54,353 | 52,339 | 51,350 | 40,191 |
| Installed - Grid battery storage (MW) | | 987 | 11,630 | 42,944 | 105,233 | 143,960 | 186,175 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |

Table 43: E+RE+ scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|
| Onshore wind (TWh) | 413 | 816 | 1,593 | 2,720 | 4,109 | 5,852 | 8,245 |
| Offshore wind (TWh) | 0.092 | 3.82 | 20.2 | 183 | 437 | 978 | 1,833 |
| Rooftop PV (TWh) | 50.1 | 79.4 | 101 | 126 | 165 | 208 | 249 |
| Utility-scale PV (TWh) | 89.6 | 362 | 825 | 1,615 | 2,438 | 3,648 | 5,253 |
| Hydro (TWh) | 300 | 312 | 295 | 294 | 300 | 291 | 291 |
| Geothermal (TWh) | 14.5 | 14.5 | 14.1 | 14.2 | 13.7 | 13.5 | 25.7 |
| Nuclear (TWh) | 802 | 766 | 683 | 462 | 338 | 121 | 0 |
| Gas (TWh) | 1,489 | 1,589 | 1,262 | 737 | 422 | 151 | 51.9 |
| Gas w cc (TWh) | 0 | 0 | 0.154 | 0.216 | 0.297 | 0.344 | 0.23 |
| Biomass (TWh) | 18.8 | 17.7 | 39 | 29.3 | 21.4 | 15.2 | 0.108 |
| Biomass w cc (TWh) | 0 | 0 | 0.079 | 0.098 | 0.188 | 0.358 | 0.556 |
| Coal (TWh) | 981 | 328 | 0.647 | 0.364 | 0.296 | 0.214 | 0.092 |

Table 44: E+RE+ scenario - PILLAR 2: Clean Electricity - Transmission

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|-------|------|------|------|------|
| Total HV transmission (for wind and solar) - Base (percent of 2020) | 0 | 0.293 | 0.731 | 1.41 | 2.36 | 3.84 | 4.07 |

Table 45: E+RE+ scenario - PILLAR 3: Clean fuels - Bioenergy

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|---------|---------|
| Biomass input - Biopower (1000 tonnes) | 11,647 | 16,788 | 55,652 | 45,494 | 37,066 | 28,898 | 161 |
| Biomass input - Biopower w/ cc (1000 tonnes) | 0 | 0 | 47.7 | 51.6 | 99.5 | 192 | 292 |
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 2.28 | 19,065 | 118,177 | 120,886 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 158 | 201 | 193 | 104 |
| Biomass input - Bio-FT w/ CC (1000 tonnes) | 0 | 0 | 0 | 67.5 | 112 | 276 | 352 |

Table 45: *E+RE+ scenario - PILLAR 3: Clean fuels - Bioenergy (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - Pyrolysis liquids (1000 tonnes) | 0 | 0 | 0 | 64,735 | 133,702 | 142,225 | 140,053 |
| Biomass input - Pyrolysis liquids w/ cc (1000 tonnes) | 0 | 0 | 0 | 65.4 | 117 | 7,078 | 142,580 |
| Biomass input - SNG (1000 tonnes) | 0 | 9.34 | 18.9 | 26 | 25.6 | 52.2 | 8.78 |
| Biomass input - Bio-SNG w/ CC (1000 tonnes) | 0 | 0 | 9.39 | 4.81 | 7.06 | 45.5 | 179,016 |
| Biomass input - Ethanol (1000 tonnes) | 129,506 | 129,506 | 129,536 | 125,006 | 67,634 | 10,261 | 905 |

Table 46: *E+RE+ scenario - PILLAR 4: CCUS - CO2 storage*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------|------|------|------|------|------|------|------|
| Annual (MMT) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 47: *E+RE+ scenario - PILLAR 6: Land sinks - Forests*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -24,500 |
| Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) | | | | | | | -14,000 |
| Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) | | | | | | | -116,000 |
| Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) | | | | | | | -29,000 |
| Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -100,000 |
| Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -21,000 |
| Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) | | | | | | | -121,000 |
| Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) | | | | | | | -20,000 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) | | | | | | | 505,500 |
| Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) | | | | | | | -36,700 |
| Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) | | | | | | | -49,000 |
| Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) | | | | | | | -209,000 |
| Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -42,500 |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | | | | | | | 200,000 |
| Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) | | | | | | | -40,500 |
| Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) | | | | | | | -181,500 |
| Carbon sink potential - Mid - All (not counting overlap) (1000 tCO2e/y) | | | | | | | -142,000 |
| Carbon sink potential - High - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -119,000 |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - Accelerate regeneration (1000 tCO2e/y) | | | | | | | 1,020,200 |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | -48,900 |

Table 47: *E+RE+ scenario - PILLAR 6: Land sinks - Forests (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - High - Avoid deforestation (1000 tCO2e/y) | | | | | | | -84,000 |
| Carbon sink potential - High - Extend rotation length (1000 tCO2e/y) | | | | | | | -302,000 |
| Carbon sink potential - High - Improve plantations (1000 tCO2e/y) | | | | | | | -57,000 |
| Carbon sink potential - High - Increase retention of HWP (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - Increase trees outside forests (1000 tCO2e/y) | | | | | | | 300,000 |
| Carbon sink potential - High - Reforest cropland (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - High - Reforest pasture (1000 tCO2e/y) | | | | | | | -242,000 |
| Carbon sink potential - High - Reforest pasture (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | 264,000 |
| Carbon sink potential - High - Restore productivity (1000 tCO2e/y) | | | | | | | - |
| Land impacted for carbon sink potential - Low - Accelerate regeneration (1000 hectares) | | | | | | | 1,535,900 |
| Land impacted for carbon sink potential - Low - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | -178,000 |
| Land impacted for carbon sink potential - Low - Extend rotation length (1000 hectares) | | | | | | | 4,000 |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 hectares) | | | | | | | 10,677 |
| Land impacted for carbon sink potential - Low - Increase retention of HWP (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - Low - Increase trees outside forests (1000 hectares) | | | | | | | 10,500 |
| Land impacted for carbon sink potential - Low - Reforest cropland (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 3,000 |
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 1,300 |
| Land impacted for carbon sink potential - Low - Restore productivity (1000 hectares) | | | | | | | 35,700 |
| Land impacted for carbon sink potential - Low - Total impacted (over 30 years) (1000 hectares) | | | | | | | 132,177 |
| Land impacted for carbon sink potential - Mid - Accelerate regeneration (1000 hectares) | | | | | | | 6,000 |
| Land impacted for carbon sink potential - Mid - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,025 |
| Land impacted for carbon sink potential - Mid - Extend rotation length (1000 hectares) | | | | | | | 106,500 |
| Land impacted for carbon sink potential - Mid - Improve plantations (1000 hectares) | | | | | | | 15,800 |
| Land impacted for carbon sink potential - Mid - Increase retention of HWP (1000 hectares) | | | | | | | 0 |

Table 47: *E+RE+ scenario - PILLAR 6: Land sinks - Forests (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - Mid - Increase trees outside forests (1000 hectares) | | | | | | | 4,350 |
| Land impacted for carbon sink potential - Mid - Reforest cropland (1000 hectares) | | | | | | | 12,000 |
| Land impacted for carbon sink potential - Mid - Reforest pasture (1000 hectares) | | | | | | | 9,400 |
| Land impacted for carbon sink potential - Mid - Restore productivity (1000 hectares) | | | | | | | 71,900 |
| Land impacted for carbon sink potential - Mid - Total impacted (over 30 years) (1000 hectares) | | | | | | | 236,975 |
| Land impacted for carbon sink potential - High - Accelerate regeneration (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - High - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,373 |
| Land impacted for carbon sink potential - High - Extend rotation length (1000 hectares) | | | | | | | 154,000 |
| Land impacted for carbon sink potential - High - Improve plantations (1000 hectares) | | | | | | | 21,000 |
| Land impacted for carbon sink potential - High - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - High - Increase trees outside forests (1000 hectares) | | | | | | | 5,700 |
| Land impacted for carbon sink potential - High - Reforest cropland (1000 hectares) | | | | | | | 16,000 |
| Land impacted for carbon sink potential - High - Reforest pasture (1000 hectares) | | | | | | | 7,500 |
| Land impacted for carbon sink potential - High - Restore productivity (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - High - Total impacted (over 30 years) (1000 hectares) | | | | | | | 282,573 |

Table 48: *E+RE+ scenario - PILLAR 6: Land sinks - Agriculture*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Moderate deployment - Corn-ethanol to energy grasses (1000 tCO ₂ e/y) | | | | | | | -23,286 |
| Carbon sink potential - Moderate deployment - Cropland measures (1000 tCO ₂ e/y) | | | | | | | -106,430 |
| Carbon sink potential - Moderate deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -3,696 |
| Carbon sink potential - Moderate deployment - Total (1000 tCO ₂ e/y) | | | | | | | -133,412 |
| Carbon sink potential - Aggressive deployment - Corn-ethanol to energy grasses (1000 tCO ₂ e/y) | | | | | | | -23,286 |

Table 48: *E+RE+ scenario - PILLAR 6: Land sinks - Agriculture (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Aggressive deployment - Cropland measures (1000 tCO ₂ e/y) | | | | | | | -203,503 |
| Carbon sink potential - Aggressive deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -7,391 |
| Carbon sink potential - Aggressive deployment - Total (1000 tCO ₂ e/y) | | | | | | | -234,180 |
| Land impacted for carbon sink - Moderate deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 11,287 |
| Land impacted for carbon sink - Moderate deployment - Cropland measures (1000 hectares) | | | | | | | 71,390 |
| Land impacted for carbon sink - Moderate deployment - Permanent conservation cover (1000 hectares) | | | | | | | 6,375 |
| Land impacted for carbon sink - Moderate deployment - Total (1000 hectares) | | | | | | | 89,052 |
| Land impacted for carbon sink - Aggressive deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 11,287 |
| Land impacted for carbon sink - Aggressive deployment - Cropland measures (1000 hectares) | | | | | | | 136,405 |
| Land impacted for carbon sink - Aggressive deployment - Permanent conservation cover (1000 hectares) | | | | | | | 12,749 |
| Land impacted for carbon sink - Aggressive deployment - Total (1000 hectares) | | | | | | | 160,442 |

Table 49: *E+RE+ scenario - PILLAR 6: Land sinks - Total assumed land sink*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|------|-------|-------|
| Total assumed land sink (Gt CO ₂ e/y) | -0.7 | -0.73 | -0.75 | -0.78 | -0.8 | -0.83 | -0.85 |

Table 50: *E+RE- scenario - IMPACTS - Health*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|-------|-------|-------|------|
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | | 1,477 | 944 | 1,055 | 933 | 440 | 111 |
| Premature deaths from air pollution - Mobile - On-Road (deaths) | | 11,515 | 10,889 | 8,385 | 4,910 | 2,254 | 876 |
| Premature deaths from air pollution - Gas Stations (deaths) | | 665 | 617 | 470 | 280 | 135 | 61.8 |
| Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | | 2,159 | 1,816 | 1,245 | 700 | 333 | 129 |
| Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | | 554 | 452 | 311 | 182 | 82.3 | 26.9 |
| Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | | 195 | 180 | 142 | 98.2 | 57.5 | 31.2 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 105 | 101 | 96 | 90.9 | 85.7 | 80.1 |

Table 50: *E+RE- scenario - IMPACTS - Health (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|--------|--------|--------|--------|--------|
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 1,436 | 1,305 | 1,006 | 665 | 403 | 222 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 352 | 292 | 221 | 153 | 106 | 73.1 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 170 | 144 | 119 | 94.1 | 69.7 | 46.2 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 74.6 | 41.7 | 41 | 39.9 | 40.1 | 36.7 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 3,872 | 3,753 | 3,693 | 3,183 | 2,682 | 2,016 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 22,684 | 29.5 | 28.4 | 24.2 | 16.7 | 1.24 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 13,081 | 8,360 | 9,347 | 8,269 | 3,897 | 985 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 102,386 | 96,814 | 74,557 | 43,657 | 20,044 | 7,790 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 5,886 | 5,467 | 4,160 | 2,477 | 1,197 | 547 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 19,136 | 16,089 | 11,036 | 6,207 | 2,952 | 1,145 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 4,909 | 4,009 | 2,756 | 1,617 | 729 | 238 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 1,731 | 1,592 | 1,261 | 870 | 509 | 277 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 932 | 892 | 850 | 805 | 758 | 709 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 12,710 | 11,555 | 8,907 | 5,887 | 3,569 | 1,962 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 3,117 | 2,585 | 1,954 | 1,351 | 939 | 647 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 1,502 | 1,275 | 1,054 | 833 | 617 | 409 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 658 | 368 | 362 | 352 | 353 | 324 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 34,386 | 33,323 | 32,793 | 28,267 | 23,819 | 17,906 |

Table 51: *E+RE- scenario - IMPACTS - Jobs*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| By economic sector - Agriculture (jobs) | | 32,312 | 43,254 | 55,699 | 47,806 | 40,069 | 47,266 |
| By economic sector - Construction (jobs) | | 554,870 | 609,561 | 678,377 | 709,984 | 731,053 | 840,030 |
| By economic sector - Manufacturing (jobs) | | 386,301 | 367,722 | 373,338 | 349,158 | 305,869 | 287,281 |
| By economic sector - Mining (jobs) | | 462,328 | 364,057 | 291,916 | 202,222 | 144,611 | 95,196 |

Table 51: E+RE- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| By economic sector - Other (jobs) | | 52,365 | 57,496 | 70,560 | 84,193 | 94,803 | 129,339 |
| By economic sector - Pipeline (jobs) | | 47,529 | 56,650 | 51,074 | 38,386 | 34,708 | 36,901 |
| By economic sector - Professional (jobs) | | 315,421 | 328,609 | 383,613 | 428,340 | 460,769 | 535,549 |
| By economic sector - Trade (jobs) | | 290,288 | 274,110 | 284,445 | 284,438 | 286,595 | 320,839 |
| By economic sector - Utilities (jobs) | | 459,157 | 526,078 | 637,006 | 735,494 | 826,322 | 1,006,835 |
| By resource sector - Biomass (jobs) | | 82,054 | 103,170 | 159,818 | 159,067 | 157,610 | 200,816 |
| By resource sector - CO2 (jobs) | | 8,025 | 122,978 | 106,414 | 50,282 | 76,142 | 143,768 |
| By resource sector - Coal (jobs) | | 66,513 | 18,419 | 10,825 | 9,372 | 8,418 | 6,947 |
| By resource sector - Grid (jobs) | | 493,267 | 565,515 | 806,588 | 957,195 | 1,015,527 | 1,113,871 |
| By resource sector - Natural Gas (jobs) | | 579,492 | 505,649 | 449,332 | 435,553 | 364,642 | 300,788 |
| By resource sector - Nuclear (jobs) | | 49,021 | 58,304 | 86,624 | 137,752 | 227,680 | 377,149 |
| By resource sector - Oil (jobs) | | 790,028 | 693,931 | 596,610 | 431,475 | 326,913 | 229,514 |
| By resource sector - Solar (jobs) | | 337,083 | 326,894 | 357,780 | 387,255 | 409,756 | 583,913 |
| By resource sector - Wind (jobs) | | 195,088 | 232,677 | 252,039 | 312,070 | 338,111 | 342,470 |
| By education level - All sectors - High school diploma or less (jobs) | | 1,080,553 | 1,100,427 | 1,188,823 | 1,202,053 | 1,208,758 | 1,358,342 |
| By education level - All sectors - Associates degree or some college (jobs) | | 777,598 | 795,657 | 861,642 | 889,831 | 909,477 | 1,029,254 |
| By education level - All sectors - Bachelors degree (jobs) | | 581,908 | 572,577 | 605,119 | 612,392 | 624,402 | 703,407 |
| By education level - All sectors - Masters or professional degree (jobs) | | 140,259 | 138,827 | 148,726 | 153,018 | 158,274 | 180,608 |
| By education level - All sectors - Doctoral degree (jobs) | | 20,254 | 20,048 | 21,719 | 22,728 | 23,889 | 27,627 |
| By education level - Biomass sector - High school diploma or less (jobs) | | 47,821 | 60,096 | 85,822 | 79,460 | 73,172 | 91,357 |
| By education level - Biomass sector - Associates degree or some college (jobs) | | 15,585 | 19,605 | 32,904 | 34,187 | 35,394 | 45,925 |
| By education level - Biomass sector - Bachelors degree (jobs) | | 14,089 | 17,574 | 30,605 | 33,633 | 36,161 | 46,832 |
| By education level - Biomass sector - Masters or professional degree (jobs) | | 3,878 | 4,982 | 8,752 | 9,750 | 10,586 | 13,711 |
| By education level - Biomass sector - Doctoral degree (jobs) | | 682 | 913 | 1,736 | 2,038 | 2,297 | 2,992 |
| By education level - CO2 sector - High school diploma or less (jobs) | | 3,476 | 53,796 | 46,155 | 21,475 | 32,628 | 62,868 |
| By education level - CO2 sector - Associates degree or some college (jobs) | | 2,815 | 43,524 | 37,197 | 17,230 | 26,131 | 50,333 |
| By education level - CO2 sector - Bachelors degree (jobs) | | 1,395 | 20,717 | 18,544 | 9,251 | 13,901 | 24,619 |
| By education level - CO2 sector - Masters or professional degree (jobs) | | 311 | 4,559 | 4,139 | 2,109 | 3,160 | 5,456 |
| By education level - CO2 sector - Doctoral degree (jobs) | | 27.8 | 380 | 378 | 217 | 322 | 491 |
| By education level - Coal sector - High school diploma or less (jobs) | | 28,741 | 8,731 | 5,749 | 4,896 | 4,322 | 3,507 |
| By education level - Coal sector - Associates degree or some college (jobs) | | 20,558 | 5,466 | 2,968 | 2,579 | 2,324 | 1,926 |
| By education level - Coal sector - Bachelors degree (jobs) | | 13,402 | 3,303 | 1,688 | 1,517 | 1,413 | 1,203 |
| By education level - Coal sector - Masters or professional degree (jobs) | | 3,317 | 801 | 369 | 334 | 313 | 270 |
| By education level - Coal sector - Doctoral degree (jobs) | | 496 | 118 | 51.4 | 47.9 | 46.1 | 40.8 |
| By education level - Grid sector - High school diploma or less (jobs) | | 209,380 | 241,183 | 345,603 | 412,022 | 439,116 | 483,799 |
| By education level - Grid sector - Associates degree or some college (jobs) | | 163,739 | 187,663 | 267,568 | 317,401 | 336,596 | 369,015 |
| By education level - Grid sector - Bachelors degree (jobs) | | 93,832 | 106,840 | 151,351 | 178,405 | 188,015 | 204,861 |

Table 51: E+RE- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|-----------|-----------|-----------|-----------|
| By education level - Grid sector - Masters or professional degree (jobs) | | 23,611 | 26,800 | 37,849 | 44,479 | 46,735 | 50,771 |
| By education level - Grid sector - Doctoral degree (jobs) | | 2,705 | 3,029 | 4,218 | 4,888 | 5,065 | 5,426 |
| By education level - Natural gas sector - High school diploma or less (jobs) | | 227,718 | 199,738 | 178,905 | 173,713 | 145,948 | 120,878 |
| By education level - Natural gas sector - Associates degree or some college (jobs) | | 186,211 | 163,836 | 146,374 | 143,998 | 121,468 | 101,198 |
| By education level - Natural gas sector - Bachelors degree (jobs) | | 129,532 | 111,273 | 97,318 | 92,498 | 76,385 | 61,909 |
| By education level - Natural gas sector - Masters or professional degree (jobs) | | 31,729 | 27,137 | 23,572 | 22,376 | 18,417 | 14,876 |
| By education level - Natural gas sector - Doctoral degree (jobs) | | 4,301 | 3,664 | 3,163 | 2,968 | 2,424 | 1,927 |
| By education level - Nuclear sector - High school diploma or less (jobs) | | 16,616 | 19,820 | 29,531 | 47,092 | 78,048 | 129,633 |
| By education level - Nuclear sector - Associates degree or some college (jobs) | | 13,385 | 15,924 | 23,664 | 37,641 | 62,228 | 103,105 |
| By education level - Nuclear sector - Bachelors degree (jobs) | | 14,469 | 17,172 | 25,459 | 40,401 | 66,637 | 110,157 |
| By education level - Nuclear sector - Masters or professional degree (jobs) | | 3,916 | 4,640 | 6,868 | 10,880 | 17,916 | 29,569 |
| By education level - Nuclear sector - Doctoral degree (jobs) | | 634 | 748 | 1,102 | 1,739 | 2,851 | 4,685 |
| By education level - Oil sector - High school diploma or less (jobs) | | 317,630 | 281,307 | 243,628 | 178,020 | 136,250 | 96,881 |
| By education level - Oil sector - Associates degree or some college (jobs) | | 205,502 | 181,086 | 156,218 | 113,373 | 86,209 | 60,753 |
| By education level - Oil sector - Bachelors degree (jobs) | | 211,973 | 183,998 | 156,433 | 111,469 | 83,191 | 57,319 |
| By education level - Oil sector - Masters or professional degree (jobs) | | 48,075 | 41,558 | 35,208 | 24,944 | 18,510 | 12,658 |
| By education level - Oil sector - Doctoral degree (jobs) | | 6,848 | 5,981 | 5,123 | 3,669 | 2,753 | 1,903 |
| By education level - Solar PV sector - High school diploma or less (jobs) | | 151,368 | 145,175 | 157,032 | 167,902 | 175,462 | 246,887 |
| By education level - Solar PV sector - Associates degree or some college (jobs) | | 108,003 | 104,868 | 114,943 | 124,604 | 132,058 | 188,521 |
| By education level - Solar PV sector - Bachelors degree (jobs) | | 60,585 | 59,637 | 66,259 | 72,859 | 78,338 | 113,405 |
| By education level - Solar PV sector - Masters or professional degree (jobs) | | 14,570 | 14,620 | 16,572 | 18,539 | 20,227 | 29,694 |
| By education level - Solar PV sector - Doctoral degree (jobs) | | 2,558 | 2,594 | 2,974 | 3,351 | 3,671 | 5,406 |
| By education level - Wind sector - High school diploma or less (jobs) | | 77,804 | 90,581 | 96,399 | 117,473 | 123,812 | 122,531 |
| By education level - Wind sector - Associates degree or some college (jobs) | | 61,801 | 73,684 | 79,806 | 98,817 | 107,068 | 108,478 |
| By education level - Wind sector - Bachelors degree (jobs) | | 42,631 | 52,063 | 57,462 | 72,361 | 80,360 | 83,103 |
| By education level - Wind sector - Masters or professional degree (jobs) | | 10,852 | 13,730 | 15,398 | 19,608 | 22,411 | 23,603 |
| By education level - Wind sector - Doctoral degree (jobs) | | 2,001 | 2,620 | 2,974 | 3,811 | 4,460 | 4,755 |
| Related work experience - All sectors - None (jobs) | | 369,258 | 376,894 | 407,525 | 415,548 | 421,231 | 475,645 |
| Related work experience - All sectors - Up to 1 year (jobs) | | 509,809 | 516,411 | 559,743 | 568,875 | 574,705 | 652,329 |
| Related work experience - All sectors - 1 to 4 years (jobs) | | 950,554 | 956,858 | 1,026,212 | 1,044,900 | 1,061,932 | 1,194,758 |

Table 51: E+RE- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| Related work experience - All sectors - 4 to 10 years (jobs) | | 605,893 | 612,494 | 656,916 | 672,114 | 685,447 | 772,593 |
| Related work experience - All sectors - Over 10 years (jobs) | | 165,058 | 164,879 | 175,633 | 178,584 | 181,485 | 203,912 |
| Related work experience - Biomass sector - None (jobs) | | 13,956 | 17,458 | 25,959 | 24,936 | 23,845 | 30,064 |
| Related work experience - Biomass sector - Up to 1 year (jobs) | | 27,570 | 33,760 | 47,881 | 44,406 | 40,793 | 51,252 |
| Related work experience - Biomass sector - 1 to 4 years (jobs) | | 24,432 | 31,802 | 51,686 | 53,347 | 54,747 | 69,875 |
| Related work experience - Biomass sector - 4 to 10 years (jobs) | | 12,623 | 15,902 | 27,189 | 28,912 | 30,450 | 39,488 |
| Related work experience - Biomass sector - Over 10 years (jobs) | | 3,473 | 4,247 | 7,104 | 7,467 | 7,776 | 10,138 |
| Related work experience - CO2 sector - None (jobs) | | 1,242 | 19,156 | 16,427 | 7,651 | 11,598 | 22,218 |
| Related work experience - CO2 sector - Up to 1 year (jobs) | | 1,441 | 22,184 | 19,195 | 9,051 | 13,744 | 26,151 |
| Related work experience - CO2 sector - 1 to 4 years (jobs) | | 2,869 | 43,804 | 38,025 | 18,068 | 27,328 | 51,225 |
| Related work experience - CO2 sector - 4 to 10 years (jobs) | | 1,986 | 30,448 | 26,294 | 12,390 | 18,757 | 35,478 |
| Related work experience - CO2 sector - Over 10 years (jobs) | | 488 | 7,386 | 6,473 | 3,122 | 4,715 | 8,696 |
| Related work experience - Coal sector - None (jobs) | | 9,056 | 2,422 | 1,346 | 1,166 | 1,047 | 864 |
| Related work experience - Coal sector - Up to 1 year (jobs) | | 13,581 | 4,133 | 2,742 | 2,352 | 2,093 | 1,712 |
| Related work experience - Coal sector - 1 to 4 years (jobs) | | 25,218 | 7,000 | 4,140 | 3,577 | 3,205 | 2,638 |
| Related work experience - Coal sector - 4 to 10 years (jobs) | | 14,899 | 3,852 | 2,035 | 1,784 | 1,622 | 1,354 |
| Related work experience - Coal sector - Over 10 years (jobs) | | 3,759 | 1,011 | 561 | 494 | 452 | 380 |
| Related work experience - Grid sector - None (jobs) | | 73,264 | 84,059 | 119,978 | 142,475 | 151,250 | 165,992 |
| Related work experience - Grid sector - Up to 1 year (jobs) | | 94,446 | 108,610 | 155,385 | 184,968 | 196,850 | 216,587 |
| Related work experience - Grid sector - 1 to 4 years (jobs) | | 178,368 | 204,334 | 291,214 | 345,323 | 366,086 | 401,232 |
| Related work experience - Grid sector - 4 to 10 years (jobs) | | 116,891 | 133,809 | 190,562 | 225,802 | 239,199 | 261,965 |
| Related work experience - Grid sector - Over 10 years (jobs) | | 30,298 | 34,702 | 49,449 | 58,626 | 62,141 | 68,096 |
| Related work experience - Natural gas sector - None (jobs) | | 83,936 | 73,667 | 65,770 | 64,307 | 54,109 | 44,918 |
| Related work experience - Natural gas sector - Up to 1 year (jobs) | | 100,806 | 87,791 | 78,010 | 75,381 | 63,035 | 51,984 |
| Related work experience - Natural gas sector - 1 to 4 years (jobs) | | 213,832 | 186,439 | 165,531 | 160,160 | 133,948 | 110,276 |
| Related work experience - Natural gas sector - 4 to 10 years (jobs) | | 142,303 | 124,309 | 110,468 | 107,416 | 90,030 | 74,386 |
| Related work experience - Natural gas sector - Over 10 years (jobs) | | 38,614 | 33,442 | 29,553 | 28,288 | 23,520 | 19,223 |
| Related work experience - Nuclear sector - None (jobs) | | 6,179 | 7,357 | 10,942 | 17,418 | 28,818 | 47,783 |
| Related work experience - Nuclear sector - Up to 1 year (jobs) | | 9,021 | 10,736 | 15,960 | 25,396 | 42,000 | 69,615 |
| Related work experience - Nuclear sector - 1 to 4 years (jobs) | | 18,297 | 21,755 | 32,311 | 51,364 | 84,868 | 140,538 |

Table 51: E+RE- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Related work experience - Nuclear sector - 4 to 10 years (jobs) | | 11,870 | 14,110 | 20,953 | 33,302 | 55,013 | 91,083 |
| Related work experience - Nuclear sector - Over 10 years (jobs) | | 3,654 | 4,347 | 6,459 | 10,272 | 16,980 | 28,130 |
| Related work experience - Oil sector - None (jobs) | | 106,461 | 93,826 | 80,890 | 58,777 | 44,741 | 31,613 |
| Related work experience - Oil sector - Up to 1 year (jobs) | | 147,290 | 129,295 | 110,970 | 80,353 | 60,948 | 42,966 |
| Related work experience - Oil sector - 1 to 4 years (jobs) | | 301,062 | 264,533 | 227,572 | 164,527 | 124,608 | 87,357 |
| Related work experience - Oil sector - 4 to 10 years (jobs) | | 182,677 | 160,250 | 137,651 | 99,336 | 75,102 | 52,553 |
| Related work experience - Oil sector - Over 10 years (jobs) | | 52,538 | 46,027 | 39,527 | 28,482 | 21,514 | 15,025 |
| Related work experience - Solar PV sector - None (jobs) | | 48,601 | 47,289 | 51,958 | 56,448 | 59,943 | 85,749 |
| Related work experience - Solar PV sector - Up to 1 year (jobs) | | 75,382 | 72,632 | 78,944 | 84,838 | 89,118 | 126,053 |
| Related work experience - Solar PV sector - 1 to 4 years (jobs) | | 117,134 | 114,009 | 125,266 | 136,119 | 144,591 | 206,863 |
| Related work experience - Solar PV sector - 4 to 10 years (jobs) | | 76,266 | 74,001 | 81,041 | 87,743 | 92,845 | 132,301 |
| Related work experience - Solar PV sector - Over 10 years (jobs) | | 19,699 | 18,963 | 20,572 | 22,107 | 23,258 | 32,947 |
| Related work experience - Wind sector - None (jobs) | | 26,563 | 31,658 | 34,255 | 42,371 | 45,879 | 46,444 |
| Related work experience - Wind sector - Up to 1 year (jobs) | | 40,271 | 47,269 | 50,655 | 62,130 | 66,125 | 66,009 |
| Related work experience - Wind sector - 1 to 4 years (jobs) | | 69,341 | 83,183 | 90,469 | 112,414 | 122,550 | 124,754 |
| Related work experience - Wind sector - 4 to 10 years (jobs) | | 46,377 | 55,813 | 60,723 | 75,430 | 82,428 | 83,985 |
| Related work experience - Wind sector - Over 10 years (jobs) | | 12,535 | 14,754 | 15,937 | 19,725 | 21,129 | 21,277 |
| On-the-Job Training - All sectors - None (jobs) | | 145,365 | 144,519 | 154,184 | 156,663 | 159,848 | 182,644 |
| On-the-Job Training - All sectors - Up to 1 year (jobs) | | 1,742,212 | 1,749,227 | 1,878,141 | 1,904,964 | 1,927,382 | 2,168,704 |
| On-the-Job Training - All sectors - 1 to 4 years (jobs) | | 528,955 | 541,194 | 583,816 | 600,348 | 613,281 | 692,691 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 158,937 | 167,392 | 183,321 | 191,282 | 197,277 | 224,671 |
| On-the-Job Training - All sectors - Over 10 years (jobs) | | 25,102 | 25,204 | 26,568 | 26,765 | 27,011 | 30,526 |
| On-the-Job Training - Biomass sector - None (jobs) | | 5,063 | 6,073 | 9,513 | 9,580 | 9,548 | 12,238 |
| On-the-Job Training - Biomass sector - Up to 1 year (jobs) | | 65,325 | 82,070 | 124,373 | 122,328 | 119,606 | 151,505 |
| On-the-Job Training - Biomass sector - 1 to 4 years (jobs) | | 9,019 | 11,632 | 19,857 | 20,755 | 21,679 | 28,149 |
| On-the-Job Training - Biomass sector - 4 to 10 years (jobs) | | 2,062 | 2,704 | 4,989 | 5,335 | 5,720 | 7,539 |
| On-the-Job Training - Biomass sector - Over 10 years (jobs) | | 586 | 690 | 1,086 | 1,071 | 1,057 | 1,386 |
| On-the-Job Training - CO2 sector - None (jobs) | | 376 | 5,694 | 5,014 | 2,434 | 3,680 | 6,766 |
| On-the-Job Training - CO2 sector - Up to 1 year (jobs) | | 4,860 | 73,964 | 64,514 | 30,878 | 46,684 | 86,891 |
| On-the-Job Training - CO2 sector - 1 to 4 years (jobs) | | 1,973 | 30,531 | 26,093 | 12,082 | 18,335 | 35,372 |

Table 51: E+RE- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| On-the-Job Training - CO2 sector - 4 to 10 years (jobs) | | 736 | 11,550 | 9,721 | 4,383 | 6,676 | 13,273 |
| On-the-Job Training - CO2 sector - Over 10 years (jobs) | | 80.3 | 1,238 | 1,072 | 505 | 768 | 1,466 |
| On-the-Job Training - Coal sector - None (jobs) | | 3,285 | 870 | 503 | 442 | 403 | 337 |
| On-the-Job Training - Coal sector - Up to 1 year (jobs) | | 45,563 | 12,917 | 7,933 | 6,868 | 6,168 | 5,088 |
| On-the-Job Training - Coal sector - 1 to 4 years (jobs) | | 13,265 | 3,547 | 1,899 | 1,641 | 1,470 | 1,214 |
| On-the-Job Training - Coal sector - 4 to 10 years (jobs) | | 3,950 | 962 | 419 | 359 | 318 | 259 |
| On-the-Job Training - Coal sector - Over 10 years (jobs) | | 450 | 123 | 70.1 | 62.6 | 58.1 | 49.7 |
| On-the-Job Training - Grid sector - None (jobs) | | 24,141 | 27,638 | 39,368 | 46,660 | 49,444 | 54,172 |
| On-the-Job Training - Grid sector - Up to 1 year (jobs) | | 316,710 | 362,957 | 517,491 | 613,900 | 651,093 | 713,918 |
| On-the-Job Training - Grid sector - 1 to 4 years (jobs) | | 110,805 | 127,133 | 181,460 | 215,489 | 228,766 | 251,069 |
| On-the-Job Training - Grid sector - 4 to 10 years (jobs) | | 37,658 | 43,246 | 61,782 | 73,432 | 78,024 | 85,703 |
| On-the-Job Training - Grid sector - Over 10 years (jobs) | | 3,953 | 4,541 | 6,488 | 7,714 | 8,199 | 9,009 |
| On-the-Job Training - Natural gas sector - None (jobs) | | 30,220 | 25,985 | 22,796 | 21,727 | 17,984 | 14,663 |
| On-the-Job Training - Natural gas sector - Up to 1 year (jobs) | | 373,945 | 325,379 | 288,474 | 278,083 | 232,133 | 190,597 |
| On-the-Job Training - Natural gas sector - 1 to 4 years (jobs) | | 128,500 | 112,783 | 100,700 | 98,631 | 83,035 | 69,060 |
| On-the-Job Training - Natural gas sector - 4 to 10 years (jobs) | | 41,324 | 36,725 | 33,119 | 33,043 | 28,098 | 23,679 |
| On-the-Job Training - Natural gas sector - Over 10 years (jobs) | | 5,503 | 4,776 | 4,243 | 4,069 | 3,392 | 2,789 |
| On-the-Job Training - Nuclear sector - None (jobs) | | 3,292 | 3,914 | 5,813 | 9,240 | 15,267 | 25,278 |
| On-the-Job Training - Nuclear sector - Up to 1 year (jobs) | | 33,439 | 39,757 | 59,046 | 93,862 | 155,082 | 256,799 |
| On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) | | 9,491 | 11,300 | 16,806 | 26,754 | 44,264 | 73,396 |
| On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) | | 2,289 | 2,726 | 4,054 | 6,455 | 10,682 | 17,715 |
| On-the-Job Training - Nuclear sector - Over 10 years (jobs) | | 510 | 608 | 905 | 1,441 | 2,386 | 3,960 |
| On-the-Job Training - Oil sector - None (jobs) | | 48,067 | 41,572 | 35,155 | 25,043 | 18,687 | 12,944 |
| On-the-Job Training - Oil sector - Up to 1 year (jobs) | | 556,244 | 488,514 | 419,941 | 303,640 | 229,994 | 161,382 |
| On-the-Job Training - Oil sector - 1 to 4 years (jobs) | | 143,995 | 126,810 | 109,358 | 79,262 | 60,197 | 42,346 |
| On-the-Job Training - Oil sector - 4 to 10 years (jobs) | | 34,009 | 30,239 | 26,292 | 19,275 | 14,800 | 10,561 |
| On-the-Job Training - Oil sector - Over 10 years (jobs) | | 7,713 | 6,796 | 5,864 | 4,255 | 3,235 | 2,281 |
| On-the-Job Training - Solar PV sector - None (jobs) | | 19,935 | 19,514 | 21,577 | 23,576 | 25,163 | 36,171 |
| On-the-Job Training - Solar PV sector - Up to 1 year (jobs) | | 217,115 | 210,681 | 230,654 | 249,955 | 264,981 | 378,330 |
| On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) | | 71,505 | 69,093 | 75,359 | 81,207 | 85,485 | 121,188 |

Table 51: E+RE- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) | | 24,449 | 23,737 | 26,060 | 28,159 | 29,630 | 41,984 |
| On-the-Job Training - Solar PV sector - Over 10 years (jobs) | | 4,079 | 3,868 | 4,130 | 4,358 | 4,496 | 6,239 |
| On-the-Job Training - Wind sector - None (jobs) | | 10,987 | 13,258 | 14,444 | 17,960 | 19,672 | 20,074 |
| On-the-Job Training - Wind sector - Up to 1 year (jobs) | | 129,010 | 152,989 | 165,716 | 205,450 | 221,641 | 224,195 |
| On-the-Job Training - Wind sector - 1 to 4 years (jobs) | | 40,403 | 48,365 | 52,284 | 64,529 | 70,050 | 70,896 |
| On-the-Job Training - Wind sector - 4 to 10 years (jobs) | | 12,459 | 15,503 | 16,883 | 20,842 | 23,330 | 23,957 |
| On-the-Job Training - Wind sector - Over 10 years (jobs) | | 2,228 | 2,562 | 2,711 | 3,289 | 3,418 | 3,347 |
| On-Site or In-Plant Training - All sectors - None (jobs) | | 419,120 | 422,336 | 453,734 | 464,129 | 473,687 | 538,264 |
| On-Site or In-Plant Training - All sectors - Up to 1 year (jobs) | | 1,579,000 | 1,586,141 | 1,703,097 | 1,727,901 | 1,748,723 | 1,968,004 |
| On-Site or In-Plant Training - All sectors - 1 to 4 years (jobs) | | 413,482 | 421,968 | 454,858 | 466,218 | 474,912 | 535,412 |
| On-Site or In-Plant Training - All sectors - 4 to 10 years (jobs) | | 168,532 | 175,634 | 190,784 | 197,316 | 202,549 | 229,508 |
| On-Site or In-Plant Training - All sectors - Over 10 years (jobs) | | 20,437 | 21,457 | 23,557 | 24,458 | 24,928 | 28,048 |
| On-Site or In-Plant Training - Biomass sector - None (jobs) | | 13,221 | 17,052 | 27,270 | 27,875 | 28,306 | 36,043 |
| On-Site or In-Plant Training - Biomass sector - Up to 1 year (jobs) | | 57,434 | 71,657 | 108,430 | 106,373 | 103,753 | 131,625 |
| On-Site or In-Plant Training - Biomass sector - 1 to 4 years (jobs) | | 8,269 | 10,558 | 17,339 | 17,726 | 18,126 | 23,389 |
| On-Site or In-Plant Training - Biomass sector - 4 to 10 years (jobs) | | 2,558 | 3,232 | 5,758 | 6,103 | 6,468 | 8,510 |
| On-Site or In-Plant Training - Biomass sector - Over 10 years (jobs) | | 572 | 670 | 1,022 | 990 | 957 | 1,250 |
| On-Site or In-Plant Training - CO2 sector - None (jobs) | | 1,228 | 18,743 | 16,306 | 7,771 | 11,762 | 22,020 |
| On-Site or In-Plant Training - CO2 sector - Up to 1 year (jobs) | | 4,497 | 68,533 | 59,677 | 28,487 | 43,083 | 80,432 |
| On-Site or In-Plant Training - CO2 sector - 1 to 4 years (jobs) | | 1,483 | 22,923 | 19,621 | 9,107 | 13,819 | 26,600 |
| On-Site or In-Plant Training - CO2 sector - 4 to 10 years (jobs) | | 731 | 11,419 | 9,664 | 4,399 | 6,691 | 13,161 |
| On-Site or In-Plant Training - CO2 sector - Over 10 years (jobs) | | 86.9 | 1,358 | 1,145 | 518 | 788 | 1,555 |
| On-Site or In-Plant Training - Coal sector - None (jobs) | | 9,841 | 2,576 | 1,407 | 1,243 | 1,140 | 959 |
| On-Site or In-Plant Training - Coal sector - Up to 1 year (jobs) | | 41,734 | 11,915 | 7,358 | 6,353 | 5,689 | 4,680 |
| On-Site or In-Plant Training - Coal sector - 1 to 4 years (jobs) | | 10,419 | 2,840 | 1,585 | 1,367 | 1,223 | 1,007 |
| On-Site or In-Plant Training - Coal sector - 4 to 10 years (jobs) | | 4,032 | 975 | 427 | 368 | 328 | 269 |
| On-Site or In-Plant Training - Coal sector - Over 10 years (jobs) | | 487 | 114 | 47 | 41.6 | 38.2 | 32.3 |
| On-Site or In-Plant Training - Grid sector - None (jobs) | | 75,116 | 85,926 | 122,285 | 144,805 | 153,303 | 167,797 |
| On-Site or In-Plant Training - Grid sector - Up to 1 year (jobs) | | 290,687 | 333,284 | 475,395 | 564,207 | 598,645 | 656,685 |
| On-Site or In-Plant Training - Grid sector - 1 to 4 years (jobs) | | 85,197 | 97,799 | 139,661 | 165,935 | 176,248 | 193,528 |

Table 51: E+RE- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|---------|
| On-Site or In-Plant Training - Grid sector - 4 to 10 years (jobs) | | 37,417 | 42,943 | 61,309 | 72,825 | 77,331 | 84,891 |
| On-Site or In-Plant Training - Grid sector - Over 10 years (jobs) | | 4,850 | 5,563 | 7,938 | 9,423 | 10,000 | 10,970 |
| On-Site or In-Plant Training - Natural gas sector - None (jobs) | | 92,260 | 80,124 | 70,811 | 68,462 | 57,144 | 47,024 |
| On-Site or In-Plant Training - Natural gas sector - Up to 1 year (jobs) | | 340,988 | 296,769 | 263,218 | 253,834 | 211,953 | 174,136 |
| On-Site or In-Plant Training - Natural gas sector - 1 to 4 years (jobs) | | 97,694 | 85,725 | 76,562 | 74,851 | 62,980 | 52,317 |
| On-Site or In-Plant Training - Natural gas sector - 4 to 10 years (jobs) | | 43,400 | 38,428 | 34,575 | 34,233 | 29,007 | 24,312 |
| On-Site or In-Plant Training - Natural gas sector - Over 10 years (jobs) | | 5,150 | 4,603 | 4,165 | 4,173 | 3,558 | 2,999 |
| On-Site or In-Plant Training - Nuclear sector - None (jobs) | | 8,775 | 10,426 | 15,475 | 24,586 | 40,598 | 67,188 |
| On-Site or In-Plant Training - Nuclear sector - Up to 1 year (jobs) | | 30,149 | 35,856 | 53,268 | 84,701 | 139,985 | 231,863 |
| On-Site or In-Plant Training - Nuclear sector - 1 to 4 years (jobs) | | 7,234 | 8,614 | 12,813 | 20,399 | 33,754 | 55,975 |
| On-Site or In-Plant Training - Nuclear sector - 4 to 10 years (jobs) | | 2,618 | 3,117 | 4,635 | 7,377 | 12,205 | 20,236 |
| On-Site or In-Plant Training - Nuclear sector - Over 10 years (jobs) | | 246 | 292 | 434 | 689 | 1,139 | 1,887 |
| On-Site or In-Plant Training - Oil sector - None (jobs) | | 127,208 | 110,889 | 94,599 | 67,871 | 51,013 | 35,531 |
| On-Site or In-Plant Training - Oil sector - Up to 1 year (jobs) | | 500,808 | 439,812 | 378,051 | 273,378 | 207,099 | 145,367 |
| On-Site or In-Plant Training - Oil sector - 1 to 4 years (jobs) | | 116,417 | 102,660 | 88,636 | 64,334 | 48,922 | 34,459 |
| On-Site or In-Plant Training - Oil sector - 4 to 10 years (jobs) | | 41,049 | 36,459 | 31,686 | 23,186 | 17,772 | 12,638 |
| On-Site or In-Plant Training - Oil sector - Over 10 years (jobs) | | 4,546 | 4,112 | 3,638 | 2,706 | 2,107 | 1,519 |
| On-Site or In-Plant Training - Solar PV sector - None (jobs) | | 57,475 | 55,885 | 61,331 | 66,567 | 70,628 | 100,917 |
| On-Site or In-Plant Training - Solar PV sector - Up to 1 year (jobs) | | 197,038 | 191,137 | 209,204 | 226,612 | 240,100 | 342,617 |
| On-Site or In-Plant Training - Solar PV sector - 1 to 4 years (jobs) | | 55,673 | 53,781 | 58,637 | 63,180 | 66,515 | 94,305 |
| On-Site or In-Plant Training - Solar PV sector - 4 to 10 years (jobs) | | 24,036 | 23,321 | 25,580 | 27,628 | 29,067 | 41,180 |
| On-Site or In-Plant Training - Solar PV sector - Over 10 years (jobs) | | 2,862 | 2,770 | 3,028 | 3,269 | 3,446 | 4,894 |
| On-Site or In-Plant Training - Wind sector - None (jobs) | | 33,997 | 40,715 | 44,248 | 54,949 | 59,794 | 60,784 |
| On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) | | 115,665 | 137,179 | 148,496 | 183,957 | 198,417 | 200,600 |
| On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | | 31,097 | 37,067 | 40,003 | 49,318 | 53,326 | 53,833 |
| On-Site or In-Plant Training - Wind sector - 4 to 10 years (jobs) | | 12,691 | 15,741 | 17,150 | 21,198 | 23,680 | 24,309 |
| On-Site or In-Plant Training - Wind sector - Over 10 years (jobs) | | 1,638 | 1,975 | 2,141 | 2,648 | 2,894 | 2,943 |
| Wage income - Biomass (million \$2019) | | 4,239 | 5,523 | 9,090 | 9,523 | 9,894 | 12,891 |
| Wage income - CO2 (million \$2019) | | 501 | 7,724 | 6,838 | 3,330 | 5,115 | 9,626 |
| Wage income - Coal (million \$2019) | | 4,038 | 1,086 | 602 | 530 | 484 | 406 |
| Wage income - Grid (million \$2019) | | 30,849 | 35,839 | 51,821 | 62,370 | 67,136 | 74,743 |
| Wage income - Natural Gas (million \$2019) | | 38,383 | 33,906 | 30,513 | 29,843 | 25,281 | 21,066 |
| Wage income - Nuclear (million \$2019) | | 3,504 | 4,267 | 6,495 | 10,586 | 17,943 | 30,498 |
| Wage income - Oil (million \$2019) | | 52,011 | 46,299 | 40,361 | 29,537 | 22,646 | 16,058 |

Table 51: *E+RE- scenario - IMPACTS - Jobs (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------------------------------|------|--------|--------|--------|--------|--------|--------|
| Wage income - Solar (million \$2019) | | 18,990 | 18,712 | 20,833 | 22,952 | 24,733 | 35,926 |
| Wage income - Wind (million \$2019) | | 11,667 | 14,283 | 15,794 | 19,946 | 22,232 | 23,098 |

Table 52: *E+RE- scenario - IMPACTS - Fossil fuel industries*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|--------|--------|--------|--------|--------|-----------|
| Oil consumption - Annual (million bbls) | | 5,922 | 5,196 | 4,119 | 3,106 | 2,384 | 1,930 |
| Oil consumption - Cumulative (million bbls) | | | | | | | 128,050 |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 4,127 | 3,429 | 2,512 |
| Oil production - Cumulative (million bbls) | | | | | | | 137,850 |
| Natural gas consumption - Annual (tcf) | | 24,131 | 21,291 | 20,400 | 18,525 | 15,159 | 12,531 |
| Natural gas consumption - Cumulative (tcf) | | | | | | | 604,218 |
| Natural gas production - Annual (tcf) | | 37,107 | 36,554 | 35,527 | 33,060 | 29,484 | 24,832 |
| Natural gas production - Cumulative (tcf) | | | | | | | 1,031,902 |

Table 53: *E+RE- scenario - PILLAR 1: Efficiency/Electrification - Overview*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Final energy use - Transportation (PJ) | 27,996 | 26,390 | 23,464 | 19,872 | 16,608 | 14,565 | 13,649 |
| Final energy use - Residential (PJ) | 11,788 | 11,090 | 10,221 | 8,966 | 7,776 | 6,967 | 6,512 |
| Final energy use - Commercial (PJ) | 9,015 | 8,942 | 8,619 | 8,103 | 7,608 | 7,344 | 7,297 |
| Final energy use - Industry (PJ) | 25,107 | 26,056 | 26,110 | 25,372 | 25,108 | 24,870 | 24,572 |

Table 54: *E+RE- scenario - PILLAR 1: Efficiency/Electrification - Electricity demand*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Electricity distribution capital invested - Cumulative 5-yr (billion \$2018) | | 182 | 187 | 336 | 359 | 314 | 329 |

Table 55: *E+RE- scenario - PILLAR 1: Efficiency/Electrification - Transportation*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|---------|---------|---------|---------|---------|
| Vehicle sales - Light-duty - EV (%) | 4.41 | 16.7 | 48.7 | 82.7 | 96.4 | 99.3 | 100 |
| Vehicle sales - Light-duty - gasoline (%) | 89.1 | 76.3 | 46.4 | 15.6 | 3.17 | 0.586 | 0 |
| Vehicle sales - Light-duty - hybrid (%) | 4.91 | 4.89 | 3.38 | 1.24 | 0.304 | 0.067 | 0 |
| Vehicle sales - Light-duty - diesel (%) | 1.4 | 1.68 | 1.2 | 0.382 | 0.072 | 0.013 | 0 |
| Vehicle sales - Light-duty - hydrogen FC (%) | 0.11 | 0.331 | 0.191 | 0.059 | 0.012 | 0.002 | 0 |
| Vehicle sales - Light-duty - other (%) | 0.095 | 0.091 | 0.058 | 0.02 | 0.004 | 0.001 | 0 |
| Vehicle sales - Medium-duty - EV (%) | 0.784 | 5.07 | 25.3 | 60.8 | 76.5 | 79.5 | 80 |
| Vehicle sales - Medium-duty - gasoline (%) | 33.7 | 33.3 | 25.5 | 9.32 | 1.77 | 0.277 | 0 |
| Vehicle sales - Medium-duty - hybrid (%) | 0.363 | 0.402 | 0.341 | 0.14 | 0.03 | 0.005 | 0 |
| Vehicle sales - Medium-duty - diesel (%) | 64.7 | 59.7 | 42.3 | 14.4 | 2.59 | 0.384 | 0 |
| Vehicle sales - Medium-duty - hydrogen FC (%) | 0.196 | 1.27 | 6.33 | 15.2 | 19.1 | 19.9 | 20 |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.255 | 0.205 | 0.083 | 0.019 | 0.004 | 0 |
| Vehicle sales - Heavy-duty - diesel (%) | 97.2 | 92.1 | 67 | 23.3 | 4.22 | 0.628 | 0 |
| Vehicle sales - Heavy-duty - EV (%) | 0.588 | 3.81 | 19 | 45.6 | 57.4 | 59.6 | 60 |
| Vehicle sales - Heavy-duty - gasoline (%) | 0.227 | 0.227 | 0.176 | 0.066 | 0.013 | 0.002 | 0 |
| Vehicle sales - Heavy-duty - hybrid (%) | 0.082 | 0.09 | 0.077 | 0.031 | 0.007 | 0.001 | 0 |
| Vehicle sales - Heavy-duty - hydrogen FC (%) | 0.392 | 2.54 | 12.7 | 30.4 | 38.2 | 39.7 | 40 |
| Vehicle sales - Heavy-duty - other (%) | 1.5 | 1.23 | 1.07 | 0.568 | 0.163 | 0.038 | 0 |
| Light-duty vehicle capital costs vs. REF - Cumulative 5-yr (million \$2018) | | 51,477 | 133,974 | 213,805 | 325,180 | 352,492 | 336,852 |
| Public EV charging plugs - DC Fast (1000 units) | 14.4 | | 93.9 | | 391 | | 628 |

Table 55: *E+RE- scenario - PILLAR 1: Efficiency/Electrification - Transportation (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|-------|------|-------|------|--------|
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 2,256 | | 9,394 | | 15,098 |

Table 56: *E+RE- scenario - PILLAR 1: Efficiency/Electrification - Residential*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|-------|-------|-------|------|
| Sales of space heating units - Electric Heat Pump (%) | 14.6 | 27.2 | 64.4 | 85 | 88 | 88.1 | 88.1 |
| Sales of space heating units - Electric Resistance (%) | 20.3 | 22.6 | 12.3 | 8.07 | 7.57 | 7.66 | 7.68 |
| Sales of space heating units - Gas (%) | 55.2 | 36.9 | 17.1 | 3.52 | 1.45 | 1.32 | 1.3 |
| Sales of space heating units - Fossil (%) | 9.95 | 13.2 | 6.18 | 3.41 | 3.02 | 2.91 | 2.9 |
| Sales of water heating units - Electric Heat Pump (%) | 0 | 7.44 | 41.8 | 56.2 | 58.5 | 59.2 | 59 |
| Sales of water heating units - Electric Resistance (%) | 38.4 | 49.2 | 38.5 | 39.8 | 39.9 | 39.3 | 39.5 |
| Sales of water heating units - Gas Furnace (%) | 58 | 40.9 | 18 | 2.56 | 0.155 | 0.003 | 0 |
| Sales of water heating units - Other (%) | 3.58 | 2.47 | 1.63 | 1.47 | 1.51 | 1.54 | 1.53 |
| Sales of cooking units - Electric Resistance (%) | 61.3 | 69.6 | 94.8 | 99.7 | 100 | 100 | 100 |
| Sales of cooking units - Gas (%) | 38.7 | 30.4 | 5.2 | 0.262 | 0 | 0 | 0 |
| Residential HVAC investment in 2020s vs. REF - Cumulative 5-yr (billion \$2018) | | 254 | 307 | | | | |

Table 57: *E+RE- scenario - PILLAR 1: Efficiency/Electrification - Commercial*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-----------|-----------|-------|-------|-------|-------|
| Sales of space heating units - Electric Heat Pump (%) | 2.95 | 17.6 | 52.9 | 76.9 | 80.6 | 80.8 | 80.8 |
| Sales of space heating units - Electric Resistance (%) | 7.91 | 9.07 | 14.4 | 17.7 | 18.4 | 18.4 | 18.4 |
| Sales of space heating units - Gas (%) | 85.2 | 70.1 | 32.1 | 5.37 | 1.07 | 0.82 | 0.817 |
| Sales of space heating units - Fossil (%) | 3.94 | 3.28 | 0.655 | 0.028 | 0 | 0 | 0 |
| Sales of water heating units - Electric Heat Pump (%) | 0.385 | 7.96 | 43.3 | 59.2 | 61.2 | 61.3 | 61.3 |
| Sales of water heating units - Electric Resistance (%) | 3.8 | 7.16 | 24 | 35.7 | 37.5 | 37.6 | 37.6 |
| Sales of water heating units - Gas (%) | 94.1 | 83.3 | 31.5 | 4.03 | 0.235 | 0.003 | 0 |
| Sales of water heating units - Other (%) | 1.66 | 1.59 | 1.2 | 1.1 | 1.1 | 1.11 | 1.11 |
| Sales of cooking units - Electric Resistance (%) | 32.5 | 46.4 | 80 | 86.6 | 87 | 87 | 87 |
| Sales of cooking units - Gas (%) | 67.5 | 53.6 | 20 | 13.4 | 13 | 13 | 13 |
| Commercial HVAC investment in 2020s - Cumulative 5-yr (million \$2018) | | 1,047,657 | 1,162,511 | | | | |

Table 58: *E+RE- scenario - PILLAR 2: Clean Electricity - Generating capacity*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|-----------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Installed - Onshore wind (MW) | 92,786 | 165,010 | 230,880 | 275,200 | 372,928 | 467,805 | 527,977 |
| Installed - Offshore wind (MW) | 29.3 | 5,029 | 10,029 | 15,029 | 20,029 | 25,000 | 30,000 |
| Installed - Rooftop PV (MW) | 33,317 | 52,523 | 69,448 | 90,809 | 117,114 | 148,351 | 185,890 |
| Installed - Utility-scale PV (MW) | 32,757 | 107,757 | 182,757 | 257,752 | 332,448 | 397,567 | 450,000 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Geothermal (MW) | 2,397 | 2,403 | 24,727 | 24,718 | 24,710 | 24,702 | 24,666 |
| Installed - Nuclear (MW) | 98,486 | 95,135 | 95,008 | 99,119 | 130,574 | 191,067 | 310,836 |
| Installed - Ccgt & gas steam (MW) | 337,190 | 357,350 | 444,963 | 472,429 | 417,657 | 342,550 | 265,745 |
| Installed - Ccgt w cc (MW) | 0 | 0 | 8.75 | 25,157 | 76,333 | 162,793 | 230,887 |
| Installed - Ct (MW) | 143,739 | 129,695 | 94,911 | 100,127 | 170,549 | 157,934 | 130,899 |
| Installed - Biomass (MW) | 10,015 | 9,155 | 8,012 | 6,276 | 4,837 | 3,506 | 2,590 |
| Installed - Biomass w cc (MW) | 0 | 0 | 9,991 | 10,948 | 11,823 | 19,170 | 30,427 |

Table 58: *E+RE- scenario - PILLAR 2: Clean Electricity - Generating capacity (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|---------|--------|--------|--------|--------|--------|--------|
| Installed - Coal (MW) | 215,985 | 44,884 | 62.3 | 136 | 148 | 147 | 33.9 |
| Installed - Other (MW) | 68,074 | 57,101 | 54,650 | 53,942 | 52,322 | 51,237 | 44,539 |
| Installed - Grid battery storage (MW) | | 819 | 1,328 | 3,062 | 13,842 | 44,320 | 52,980 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |

Table 59: *E+RE- scenario - PILLAR 2: Clean Electricity - Generation*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|
| Onshore wind (TWh) | 390 | 686 | 974 | 1,157 | 1,585 | 1,984 | 2,223 |
| Offshore wind (TWh) | 0.092 | 20.3 | 42.4 | 76.3 | 90.7 | 109 | 133 |
| Rooftop PV (TWh) | 50.1 | 79.4 | 102 | 130 | 173 | 220 | 270 |
| Utility-scale PV (TWh) | 84.9 | 275 | 452 | 632 | 819 | 990 | 1,099 |
| Hydro (TWh) | 300 | 312 | 295 | 296 | 304 | 294 | 296 |
| Geothermal (TWh) | 14.6 | 14.6 | 151 | 151 | 151 | 151 | 150 |
| Nuclear (TWh) | 802 | 775 | 775 | 812 | 1,075 | 1,580 | 2,578 |
| Gas (TWh) | 1,518 | 1,881 | 1,802 | 1,967 | 1,561 | 643 | 112 |
| Gas w cc (TWh) | 0 | 0 | 0.046 | 198 | 585 | 1,189 | 1,415 |
| Biomass (TWh) | 18.2 | 19.6 | 43.4 | 25.4 | 19.4 | 14.6 | 0.174 |
| Biomass w cc (TWh) | 0 | 0 | 74.4 | 81.5 | 87.9 | 143 | 226 |
| Coal (TWh) | 982 | 225 | 0.218 | 0.476 | 0.52 | 0.515 | 0.119 |

Table 60: *E+RE- scenario - PILLAR 2: Clean Electricity - Transmission*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|------|-------|-------|-------|
| Total HV transmission (for wind and solar) - Base (percent of 2020) | 0 | 0.258 | 0.388 | 0.6 | 0.808 | 0.936 | 0.951 |

Table 61: *E+RE- scenario - PILLAR 3: Clean fuels - Bioenergy*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - Biopower (1000 tonnes) | 10,321 | 20,110 | 59,104 | 41,822 | 35,169 | 28,144 | 186 |
| Biomass input - Biopower w/ cc (1000 tonnes) | 0 | 0 | 44,936 | 49,136 | 52,999 | 86,012 | 136,463 |
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 181,112 | 265,263 | 317,346 | 406,847 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 94.3 | 105 | 111 | 67.2 |
| Biomass input - Bio-FT w/ CC (1000 tonnes) | 0 | 0 | 0 | 139 | 152 | 169 | 172 |
| Biomass input - Pyrolysis liquids (1000 tonnes) | 0 | 0 | 0 | 205 | 227 | 232 | 9,595 |
| Biomass input - Pyrolysis liquids w/ cc (1000 tonnes) | 0 | 0 | 0 | 178 | 195 | 225 | 30,115 |
| Biomass input - SNG (1000 tonnes) | 0 | 11.2 | 45.8 | 16.6 | 9.09 | 8.18 | 2.31 |
| Biomass input - Bio-SNG w/ CC (1000 tonnes) | 0 | 0 | 92.7 | 70.2 | 47 | 24.8 | 5.58 |
| Biomass input - Ethanol (1000 tonnes) | 129,506 | 129,506 | 129,537 | 125,006 | 67,634 | 10,261 | 905 |

Table 62: *E+RE- scenario - PILLAR 4: CCUS - CO2 storage*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------|------|------|------|------|------|-------|-------|
| Annual (MMT) | 0 | 2.77 | 197 | 576 | 889 | 1,266 | 1,649 |

Table 63: *E+RE- scenario - PILLAR 6: Land sinks - Forests*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -24,500 |
| Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) | | | | | | | -14,000 |

Table 63: E+RE- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) | | | | | | | -116,000 |
| Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) | | | | | | | -29,000 |
| Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -100,000 |
| Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -21,000 |
| Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) | | | | | | | -121,000 |
| Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) | | | | | | | -20,000 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) | | | | | | | 505,500 |
| Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) | | | | | | | -36,700 |
| Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) | | | | | | | -49,000 |
| Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) | | | | | | | -209,000 |
| Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -42,500 |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | | | | | | | 200,000 |
| Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) | | | | | | | -40,500 |
| Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) | | | | | | | -181,500 |
| Carbon sink potential - Mid - All (not counting overlap) (1000 tCO2e/y) | | | | | | | -142,000 |
| Carbon sink potential - High - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -119,000 |
| Carbon sink potential - High - Avoid deforestation (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - Extend rotation length (1000 tCO2e/y) | | | | | | | 1,020,200 |
| Carbon sink potential - High - Improve plantations (1000 tCO2e/y) | | | | | | | -48,900 |
| Carbon sink potential - High - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -84,000 |
| Carbon sink potential - High - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -302,000 |
| Carbon sink potential - High - Reforest cropland (1000 tCO2e/y) | | | | | | | -57,000 |
| Carbon sink potential - High - Reforest pasture (1000 tCO2e/y) | | | | | | | - |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | 300,000 |
| Land impacted for carbon sink potential - Low - Accelerate regeneration (1000 hectares) | | | | | | | -60,000 |
| | | | | | | | -242,000 |
| | | | | | | | - |
| | | | | | | | 264,000 |
| | | | | | | | - |
| | | | | | | | 1,535,900 |
| | | | | | | | -178,000 |
| | | | | | | | 4,000 |

Table 63: E+RE- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - Low - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 10,677 |
| Land impacted for carbon sink potential - Low - Extend rotation length (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 hectares) | | | | | | | 10,500 |
| Land impacted for carbon sink potential - Low - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Low - Increase trees outside forests (1000 hectares) | | | | | | | 3,000 |
| Land impacted for carbon sink potential - Low - Reforest cropland (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 1,300 |
| Land impacted for carbon sink potential - Low - Restore productivity (1000 hectares) | | | | | | | 35,700 |
| Land impacted for carbon sink potential - Low - Total impacted (over 30 years) (1000 hectares) | | | | | | | 132,177 |
| Land impacted for carbon sink potential - Mid - Accelerate regeneration (1000 hectares) | | | | | | | 6,000 |
| Land impacted for carbon sink potential - Mid - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,025 |
| Land impacted for carbon sink potential - Mid - Extend rotation length (1000 hectares) | | | | | | | 106,500 |
| Land impacted for carbon sink potential - Mid - Improve plantations (1000 hectares) | | | | | | | 15,800 |
| Land impacted for carbon sink potential - Mid - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Mid - Increase trees outside forests (1000 hectares) | | | | | | | 4,350 |
| Land impacted for carbon sink potential - Mid - Reforest cropland (1000 hectares) | | | | | | | 12,000 |
| Land impacted for carbon sink potential - Mid - Reforest pasture (1000 hectares) | | | | | | | 9,400 |
| Land impacted for carbon sink potential - Mid - Restore productivity (1000 hectares) | | | | | | | 71,900 |
| Land impacted for carbon sink potential - Mid - Total impacted (over 30 years) (1000 hectares) | | | | | | | 236,975 |
| Land impacted for carbon sink potential - High - Accelerate regeneration (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - High - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,373 |
| Land impacted for carbon sink potential - High - Extend rotation length (1000 hectares) | | | | | | | 154,000 |

Table 63: *E+RE- scenario - PILLAR 6: Land sinks - Forests (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - High - Improve plantations (1000 hectares) | | | | | | | 21,000 |
| Land impacted for carbon sink potential - High - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - High - Increase trees outside forests (1000 hectares) | | | | | | | 5,700 |
| Land impacted for carbon sink potential - High - Reforest cropland (1000 hectares) | | | | | | | 16,000 |
| Land impacted for carbon sink potential - High - Reforest pasture (1000 hectares) | | | | | | | 7,500 |
| Land impacted for carbon sink potential - High - Restore productivity (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - High - Total impacted (over 30 years) (1000 hectares) | | | | | | | 282,573 |

Table 64: *E+RE- scenario - PILLAR 6: Land sinks - Agriculture*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Moderate deployment - Corn-ethanol to energy grasses (1000 tCO ₂ e/y) | | | | | | | -23,286 |
| Carbon sink potential - Moderate deployment - Cropland measures (1000 tCO ₂ e/y) | | | | | | | -106,430 |
| Carbon sink potential - Moderate deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -3,696 |
| Carbon sink potential - Moderate deployment - Total (1000 tCO ₂ e/y) | | | | | | | -133,412 |
| Carbon sink potential - Aggressive deployment - Corn-ethanol to energy grasses (1000 tCO ₂ e/y) | | | | | | | -23,286 |
| Carbon sink potential - Aggressive deployment - Cropland measures (1000 tCO ₂ e/y) | | | | | | | -203,503 |
| Carbon sink potential - Aggressive deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -7,391 |
| Carbon sink potential - Aggressive deployment - Total (1000 tCO ₂ e/y) | | | | | | | -234,180 |
| Land impacted for carbon sink - Moderate deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 11,287 |
| Land impacted for carbon sink - Moderate deployment - Cropland measures (1000 hectares) | | | | | | | 71,390 |
| Land impacted for carbon sink - Moderate deployment - Permanent conservation cover (1000 hectares) | | | | | | | 6,375 |
| Land impacted for carbon sink - Moderate deployment - Total (1000 hectares) | | | | | | | 89,052 |
| Land impacted for carbon sink - Aggressive deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 11,287 |

Table 64: *E+RE- scenario - PILLAR 6: Land sinks - Agriculture (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink - Aggressive deployment - Cropland measures (1000 hectares) | | | | | | | 136,405 |
| Land impacted for carbon sink - Aggressive deployment - Permanent conservation cover (1000 hectares) | | | | | | | 12,749 |
| Land impacted for carbon sink - Aggressive deployment - Total (1000 hectares) | | | | | | | 160,442 |

Table 65: *E+RE- scenario - PILLAR 6: Land sinks - Total assumed land sink*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|-------------------------------------|------|-------|-------|-------|------|-------|-------|
| Total assumed land sink (Gt CO2e/y) | -0.7 | -0.73 | -0.75 | -0.78 | -0.8 | -0.83 | -0.85 |

Table 66: *E-B+ scenario - IMPACTS - Health*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|--------|--------|--------|
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | | 1,453 | 816 | 482 | 354 | 202 | 83.2 |
| Premature deaths from air pollution - Mobile - On-Road (deaths) | | 11,726 | 12,039 | 11,890 | 10,859 | 8,759 | 6,079 |
| Premature deaths from air pollution - Gas Stations (deaths) | | 679 | 694 | 678 | 614 | 493 | 344 |
| Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | | 2,179 | 2,044 | 1,857 | 1,562 | 1,178 | 785 |
| Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | | 564 | 545 | 527 | 466 | 354 | 231 |
| Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | | 198 | 201 | 201 | 187 | 154 | 115 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 105 | 101 | 96 | 90.9 | 85.7 | 80.1 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 1,444 | 1,457 | 1,430 | 1,311 | 1,099 | 846 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 354 | 324 | 295 | 255 | 215 | 176 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 170 | 154 | 140 | 124 | 109 | 94.1 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 80.5 | 41.8 | 41.4 | 40.6 | 40.7 | 39.6 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 3,809 | 3,424 | 2,925 | 2,527 | 2,222 | 1,583 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 22,684 | 29.5 | 28.4 | 24.2 | 16.7 | 1.24 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 12,872 | 7,230 | 4,270 | 3,134 | 1,787 | 737 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 104,258 | 107,043 | 105,711 | 96,553 | 77,882 | 54,050 |

Table 66: *E-B+ scenario - IMPACTS - Health (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|--------|--------|--------|--------|--------|--------|
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 6,015 | 6,145 | 6,003 | 5,440 | 4,367 | 3,042 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 19,305 | 18,115 | 16,457 | 13,841 | 10,437 | 6,953 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 4,996 | 4,831 | 4,667 | 4,128 | 3,139 | 2,048 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 1,751 | 1,777 | 1,781 | 1,661 | 1,366 | 1,020 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 932 | 892 | 850 | 805 | 758 | 709 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 12,787 | 12,898 | 12,661 | 11,609 | 9,733 | 7,490 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 3,133 | 2,865 | 2,608 | 2,254 | 1,902 | 1,554 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 1,502 | 1,367 | 1,236 | 1,102 | 966 | 833 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 710 | 369 | 365 | 358 | 359 | 350 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 33,820 | 30,408 | 25,973 | 22,443 | 19,734 | 14,061 |

Table 67: *E-B+ scenario - IMPACTS - Jobs*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-----------|-----------|-----------|-----------|-----------|-----------|
| By economic sector - Agriculture (jobs) | | 32,174 | 42,288 | 59,071 | 62,967 | 64,464 | 78,944 |
| By economic sector - Construction (jobs) | | 575,484 | 746,785 | 814,234 | 833,754 | 996,525 | 1,306,738 |
| By economic sector - Manufacturing (jobs) | | 407,277 | 479,463 | 456,205 | 403,814 | 454,010 | 529,607 |
| By economic sector - Mining (jobs) | | 457,822 | 349,136 | 269,459 | 206,374 | 156,952 | 92,010 |
| By economic sector - Other (jobs) | | 56,223 | 82,163 | 98,243 | 111,026 | 143,555 | 221,195 |
| By economic sector - Pipeline (jobs) | | 46,238 | 52,377 | 44,732 | 34,806 | 32,366 | 31,958 |
| By economic sector - Professional (jobs) | | 327,607 | 398,767 | 470,454 | 538,093 | 663,903 | 864,761 |
| By economic sector - Trade (jobs) | | 297,695 | 314,577 | 335,419 | 353,629 | 408,159 | 513,937 |
| By economic sector - Utilities (jobs) | | 457,425 | 558,317 | 620,120 | 651,547 | 823,853 | 1,087,176 |
| By resource sector - Biomass (jobs) | | 84,135 | 102,666 | 169,933 | 238,222 | 297,448 | 376,673 |
| By resource sector - CO2 (jobs) | | 7,356 | 110,939 | 96,104 | 46,428 | 69,905 | 129,825 |
| By resource sector - Coal (jobs) | | 70,411 | 19,426 | 10,921 | 9,514 | 8,525 | 7,486 |
| By resource sector - Grid (jobs) | | 503,668 | 703,332 | 902,053 | 1,022,720 | 1,388,906 | 1,874,725 |
| By resource sector - Natural Gas (jobs) | | 549,721 | 413,742 | 308,646 | 265,702 | 210,383 | 156,961 |
| By resource sector - Nuclear (jobs) | | 49,017 | 46,211 | 41,204 | 35,097 | 30,602 | 43,416 |
| By resource sector - Oil (jobs) | | 792,899 | 708,136 | 634,032 | 560,853 | 477,059 | 296,731 |
| By resource sector - Solar (jobs) | | 370,685 | 518,991 | 531,229 | 533,475 | 644,974 | 1,015,373 |
| By resource sector - Wind (jobs) | | 230,053 | 400,430 | 473,816 | 483,999 | 615,983 | 825,137 |
| By education level - All sectors - High school diploma or less (jobs) | | 1,106,003 | 1,272,296 | 1,337,049 | 1,340,862 | 1,565,089 | 1,976,427 |
| By education level - All sectors - Associates degree or some college (jobs) | | 795,318 | 922,464 | 969,608 | 980,171 | 1,162,346 | 1,488,136 |
| By education level - All sectors - Bachelors degree (jobs) | | 593,023 | 648,934 | 671,043 | 678,107 | 785,647 | 972,635 |
| By education level - All sectors - Masters or professional degree (jobs) | | 142,869 | 157,166 | 165,383 | 170,402 | 199,545 | 249,935 |

Table 67: E-B+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|---------|
| By education level - All sectors - Doctoral degree (jobs) | | 20,731 | 23,013 | 24,856 | 26,468 | 31,160 | 39,193 |
| By education level - Biomass sector - High school diploma or less (jobs) | | 48,466 | 59,456 | 90,901 | 114,020 | 132,819 | 166,652 |
| By education level - Biomass sector - Associates degree or some college (jobs) | | 16,090 | 19,588 | 35,004 | 52,412 | 68,012 | 86,972 |
| By education level - Biomass sector - Bachelors degree (jobs) | | 14,783 | 17,693 | 32,769 | 53,142 | 71,318 | 90,755 |
| By education level - Biomass sector - Masters or professional degree (jobs) | | 4,070 | 5,008 | 9,386 | 15,369 | 20,750 | 26,476 |
| By education level - Biomass sector - Doctoral degree (jobs) | | 726 | 921 | 1,873 | 3,279 | 4,550 | 5,818 |
| By education level - CO2 sector - High school diploma or less (jobs) | | 3,181 | 48,591 | 41,726 | 19,777 | 29,903 | 56,834 |
| By education level - CO2 sector - Associates degree or some college (jobs) | | 2,575 | 39,321 | 33,632 | 15,862 | 23,943 | 45,506 |
| By education level - CO2 sector - Bachelors degree (jobs) | | 1,286 | 18,604 | 16,689 | 8,614 | 12,834 | 22,147 |
| By education level - CO2 sector - Masters or professional degree (jobs) | | 287 | 4,086 | 3,719 | 1,970 | 2,924 | 4,900 |
| By education level - CO2 sector - Doctoral degree (jobs) | | 26 | 337 | 337 | 205 | 301 | 437 |
| By education level - Coal sector - High school diploma or less (jobs) | | 30,641 | 9,079 | 5,799 | 4,970 | 4,379 | 3,778 |
| By education level - Coal sector - Associates degree or some college (jobs) | | 21,668 | 5,811 | 2,994 | 2,616 | 2,352 | 2,073 |
| By education level - Coal sector - Bachelors degree (jobs) | | 14,117 | 3,542 | 1,704 | 1,540 | 1,431 | 1,302 |
| By education level - Coal sector - Masters or professional degree (jobs) | | 3,469 | 866 | 372 | 338 | 317 | 290 |
| By education level - Coal sector - Doctoral degree (jobs) | | 517 | 128 | 51.8 | 48.5 | 46.6 | 43.7 |
| By education level - Grid sector - High school diploma or less (jobs) | | 213,795 | 299,960 | 386,507 | 440,227 | 600,566 | 814,268 |
| By education level - Grid sector - Associates degree or some college (jobs) | | 167,192 | 233,397 | 299,236 | 339,129 | 460,353 | 621,078 |
| By education level - Grid sector - Bachelors degree (jobs) | | 95,810 | 132,877 | 169,265 | 190,617 | 257,143 | 344,795 |
| By education level - Grid sector - Masters or professional degree (jobs) | | 24,109 | 33,331 | 42,329 | 47,524 | 63,918 | 85,452 |
| By education level - Grid sector - Doctoral degree (jobs) | | 2,762 | 3,767 | 4,717 | 5,223 | 6,927 | 9,132 |
| By education level - Natural gas sector - High school diploma or less (jobs) | | 216,010 | 163,684 | 122,940 | 106,082 | 84,259 | 63,187 |
| By education level - Natural gas sector - Associates degree or some college (jobs) | | 176,526 | 133,696 | 100,826 | 88,327 | 70,666 | 53,110 |
| By education level - Natural gas sector - Bachelors degree (jobs) | | 122,977 | 91,161 | 66,596 | 55,978 | 43,583 | 31,999 |
| By education level - Natural gas sector - Masters or professional degree (jobs) | | 30,123 | 22,202 | 16,129 | 13,537 | 10,512 | 7,683 |
| By education level - Natural gas sector - Doctoral degree (jobs) | | 4,086 | 2,999 | 2,155 | 1,778 | 1,363 | 982 |
| By education level - Nuclear sector - High school diploma or less (jobs) | | 16,614 | 15,709 | 14,047 | 11,998 | 10,490 | 14,923 |
| By education level - Nuclear sector - Associates degree or some college (jobs) | | 13,384 | 12,621 | 11,256 | 9,590 | 8,364 | 11,869 |
| By education level - Nuclear sector - Bachelors degree (jobs) | | 14,468 | 13,610 | 12,110 | 10,294 | 8,957 | 12,681 |
| By education level - Nuclear sector - Masters or professional degree (jobs) | | 3,916 | 3,678 | 3,267 | 2,772 | 2,408 | 3,404 |

Table 67: E-B+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|-----------|-----------|-----------|-----------|-----------|
| By education level - Nuclear sector - Doctoral degree (jobs) | | 634 | 593 | 524 | 443 | 383 | 539 |
| By education level - Oil sector - High school diploma or less (jobs) | | 318,839 | 287,355 | 259,740 | 232,096 | 199,165 | 125,368 |
| By education level - Oil sector - Associates degree or some college (jobs) | | 206,247 | 184,787 | 166,011 | 147,370 | 125,808 | 78,548 |
| By education level - Oil sector - Bachelors degree (jobs) | | 212,707 | 187,569 | 165,669 | 144,398 | 121,155 | 74,021 |
| By education level - Oil sector - Masters or professional degree (jobs) | | 48,235 | 42,333 | 37,202 | 32,247 | 26,927 | 16,337 |
| By education level - Oil sector - Doctoral degree (jobs) | | 6,871 | 6,092 | 5,410 | 4,741 | 4,004 | 2,456 |
| By education level - Solar PV sector - High school diploma or less (jobs) | | 166,451 | 230,569 | 233,286 | 231,392 | 276,546 | 430,424 |
| By education level - Solar PV sector - Associates degree or some college (jobs) | | 118,757 | 166,412 | 170,610 | 171,623 | 207,774 | 327,576 |
| By education level - Solar PV sector - Bachelors degree (jobs) | | 66,702 | 95,099 | 98,596 | 100,447 | 123,471 | 197,456 |
| By education level - Solar PV sector - Masters or professional degree (jobs) | | 15,984 | 22,930 | 24,411 | 25,440 | 31,532 | 50,834 |
| By education level - Solar PV sector - Doctoral degree (jobs) | | 2,792 | 3,981 | 4,326 | 4,573 | 5,651 | 9,083 |
| By education level - Wind sector - High school diploma or less (jobs) | | 92,006 | 157,892 | 182,103 | 180,301 | 226,962 | 300,995 |
| By education level - Wind sector - Associates degree or some college (jobs) | | 72,880 | 126,831 | 150,039 | 153,239 | 195,072 | 261,403 |
| By education level - Wind sector - Bachelors degree (jobs) | | 50,173 | 88,778 | 107,645 | 113,077 | 145,755 | 197,478 |
| By education level - Wind sector - Masters or professional degree (jobs) | | 12,677 | 22,732 | 28,569 | 31,205 | 40,258 | 54,558 |
| By education level - Wind sector - Doctoral degree (jobs) | | 2,316 | 4,196 | 5,460 | 6,178 | 7,935 | 10,703 |
| Related work experience - All sectors - None (jobs) | | 377,113 | 432,888 | 455,922 | 460,931 | 541,244 | 686,585 |
| Related work experience - All sectors - Up to 1 year (jobs) | | 523,267 | 602,970 | 636,844 | 642,387 | 752,133 | 956,966 |
| Related work experience - All sectors - 1 to 4 years (jobs) | | 970,443 | 1,095,909 | 1,145,801 | 1,156,722 | 1,352,906 | 1,700,110 |
| Related work experience - All sectors - 4 to 10 years (jobs) | | 618,578 | 702,831 | 733,978 | 740,815 | 869,710 | 1,097,360 |
| Related work experience - All sectors - Over 10 years (jobs) | | 168,544 | 189,274 | 195,393 | 195,155 | 227,793 | 285,306 |
| Related work experience - Biomass sector - None (jobs) | | 14,242 | 17,332 | 27,557 | 36,705 | 44,377 | 55,834 |
| Related work experience - Biomass sector - Up to 1 year (jobs) | | 28,024 | 33,522 | 50,606 | 64,227 | 75,606 | 95,317 |
| Related work experience - Biomass sector - 1 to 4 years (jobs) | | 25,157 | 31,622 | 55,215 | 80,869 | 103,220 | 130,658 |
| Related work experience - Biomass sector - 4 to 10 years (jobs) | | 13,109 | 15,926 | 29,001 | 44,841 | 59,014 | 75,329 |
| Related work experience - Biomass sector - Over 10 years (jobs) | | 3,603 | 4,264 | 7,554 | 11,581 | 15,231 | 19,534 |
| Related work experience - CO2 sector - None (jobs) | | 1,137 | 17,299 | 14,848 | 7,050 | 10,633 | 20,081 |
| Related work experience - CO2 sector - Up to 1 year (jobs) | | 1,320 | 20,019 | 17,339 | 8,351 | 12,612 | 23,622 |
| Related work experience - CO2 sector - 1 to 4 years (jobs) | | 2,631 | 39,497 | 34,328 | 16,699 | 25,105 | 46,239 |
| Related work experience - CO2 sector - 4 to 10 years (jobs) | | 1,820 | 27,472 | 23,749 | 11,436 | 17,216 | 32,042 |

Table 67: E-B+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| Related work experience - CO2 sector - Over 10 years (jobs) | | 448 | 6,652 | 5,838 | 2,892 | 4,338 | 7,842 |
| Related work experience - Coal sector - None (jobs) | | 9,564 | 2,569 | 1,358 | 1,183 | 1,060 | 931 |
| Related work experience - Coal sector - Up to 1 year (jobs) | | 14,478 | 4,297 | 2,767 | 2,388 | 2,120 | 1,844 |
| Related work experience - Coal sector - 1 to 4 years (jobs) | | 26,712 | 7,377 | 4,177 | 3,631 | 3,246 | 2,843 |
| Related work experience - Coal sector - 4 to 10 years (jobs) | | 15,695 | 4,109 | 2,053 | 1,810 | 1,642 | 1,460 |
| Related work experience - Coal sector - Over 10 years (jobs) | | 3,962 | 1,074 | 566 | 501 | 457 | 409 |
| Related work experience - Grid sector - None (jobs) | | 74,809 | 104,545 | 134,178 | 152,228 | 206,860 | 279,376 |
| Related work experience - Grid sector - Up to 1 year (jobs) | | 96,438 | 135,079 | 173,776 | 197,630 | 269,226 | 364,531 |
| Related work experience - Grid sector - 1 to 4 years (jobs) | | 182,129 | 254,131 | 325,681 | 368,962 | 500,686 | 675,302 |
| Related work experience - Grid sector - 4 to 10 years (jobs) | | 119,355 | 166,419 | 213,117 | 241,259 | 327,146 | 440,906 |
| Related work experience - Grid sector - Over 10 years (jobs) | | 30,937 | 43,159 | 55,301 | 62,640 | 84,989 | 114,610 |
| Related work experience - Natural gas sector - None (jobs) | | 79,594 | 60,206 | 45,249 | 39,353 | 31,361 | 23,517 |
| Related work experience - Natural gas sector - Up to 1 year (jobs) | | 95,636 | 71,908 | 53,583 | 45,998 | 36,381 | 27,158 |
| Related work experience - Natural gas sector - 1 to 4 years (jobs) | | 202,869 | 152,582 | 113,636 | 97,575 | 77,128 | 57,447 |
| Related work experience - Natural gas sector - 4 to 10 years (jobs) | | 134,972 | 101,628 | 75,927 | 65,604 | 52,043 | 38,861 |
| Related work experience - Natural gas sector - Over 10 years (jobs) | | 36,650 | 27,418 | 20,251 | 17,172 | 13,470 | 9,977 |
| Related work experience - Nuclear sector - None (jobs) | | 6,178 | 5,831 | 5,205 | 4,438 | 3,873 | 5,501 |
| Related work experience - Nuclear sector - Up to 1 year (jobs) | | 9,020 | 8,509 | 7,592 | 6,471 | 5,645 | 8,014 |
| Related work experience - Nuclear sector - 1 to 4 years (jobs) | | 18,296 | 17,242 | 15,369 | 13,087 | 11,407 | 16,178 |
| Related work experience - Nuclear sector - 4 to 10 years (jobs) | | 11,869 | 11,183 | 9,966 | 8,485 | 7,394 | 10,485 |
| Related work experience - Nuclear sector - Over 10 years (jobs) | | 3,654 | 3,445 | 3,072 | 2,617 | 2,282 | 3,238 |
| Related work experience - Oil sector - None (jobs) | | 106,860 | 95,809 | 86,142 | 76,551 | 65,362 | 40,896 |
| Related work experience - Oil sector - Up to 1 year (jobs) | | 147,849 | 132,071 | 118,310 | 104,771 | 89,100 | 55,605 |
| Related work experience - Oil sector - 1 to 4 years (jobs) | | 302,142 | 269,872 | 241,615 | 213,657 | 181,735 | 112,904 |
| Related work experience - Oil sector - 4 to 10 years (jobs) | | 183,328 | 163,462 | 146,092 | 128,961 | 109,518 | 67,918 |
| Related work experience - Oil sector - Over 10 years (jobs) | | 52,719 | 46,922 | 41,873 | 36,913 | 31,344 | 19,408 |
| Related work experience - Solar PV sector - None (jobs) | | 53,411 | 74,850 | 76,999 | 77,691 | 94,143 | 148,583 |
| Related work experience - Solar PV sector - Up to 1 year (jobs) | | 82,907 | 115,416 | 117,300 | 116,920 | 140,443 | 219,669 |
| Related work experience - Solar PV sector - 1 to 4 years (jobs) | | 128,798 | 180,893 | 185,906 | 187,466 | 227,429 | 359,260 |
| Related work experience - Solar PV sector - 4 to 10 years (jobs) | | 83,840 | 117,305 | 120,215 | 120,822 | 145,996 | 229,709 |

Table 67: E-B+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Related work experience - Solar PV sector - Over 10 years (jobs) | | 21,729 | 30,528 | 30,810 | 30,577 | 36,962 | 58,153 |
| Related work experience - Wind sector - None (jobs) | | 31,318 | 54,448 | 64,386 | 65,733 | 83,573 | 111,866 |
| Related work experience - Wind sector - Up to 1 year (jobs) | | 47,594 | 82,150 | 95,571 | 95,632 | 120,999 | 161,207 |
| Related work experience - Wind sector - 1 to 4 years (jobs) | | 81,709 | 142,693 | 169,874 | 174,777 | 222,950 | 299,279 |
| Related work experience - Wind sector - 4 to 10 years (jobs) | | 54,589 | 95,326 | 113,857 | 117,597 | 149,740 | 200,650 |
| Related work experience - Wind sector - Over 10 years (jobs) | | 14,842 | 25,813 | 30,128 | 30,261 | 38,720 | 52,135 |
| On-the-Job Training - All sectors - None (jobs) | | 148,750 | 166,717 | 173,942 | 175,848 | 204,837 | 258,726 |
| On-the-Job Training - All sectors - Up to 1 year (jobs) | | 1,781,183 | 2,011,740 | 2,105,526 | 2,122,983 | 2,477,744 | 3,112,513 |
| On-the-Job Training - All sectors - 1 to 4 years (jobs) | | 540,098 | 623,157 | 652,576 | 657,218 | 775,735 | 987,327 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 162,120 | 192,620 | 205,572 | 210,171 | 251,014 | 324,358 |
| On-the-Job Training - All sectors - Over 10 years (jobs) | | 25,792 | 29,639 | 30,323 | 29,791 | 34,456 | 43,403 |
| On-the-Job Training - Biomass sector - None (jobs) | | 5,236 | 6,088 | 10,105 | 14,671 | 18,626 | 23,562 |
| On-the-Job Training - Biomass sector - Up to 1 year (jobs) | | 66,889 | 81,601 | 132,250 | 182,098 | 224,785 | 283,714 |
| On-the-Job Training - Biomass sector - 1 to 4 years (jobs) | | 9,286 | 11,590 | 21,134 | 31,640 | 41,117 | 52,685 |
| On-the-Job Training - Biomass sector - 4 to 10 years (jobs) | | 2,125 | 2,696 | 5,302 | 8,200 | 10,872 | 14,064 |
| On-the-Job Training - Biomass sector - Over 10 years (jobs) | | 600 | 692 | 1,143 | 1,614 | 2,049 | 2,648 |
| On-the-Job Training - CO2 sector - None (jobs) | | 346 | 5,127 | 4,521 | 2,256 | 3,387 | 6,100 |
| On-the-Job Training - CO2 sector - Up to 1 year (jobs) | | 4,460 | 66,655 | 58,216 | 28,568 | 42,915 | 78,399 |
| On-the-Job Training - CO2 sector - 1 to 4 years (jobs) | | 1,805 | 27,584 | 23,594 | 11,121 | 16,798 | 31,982 |
| On-the-Job Training - CO2 sector - 4 to 10 years (jobs) | | 672 | 10,456 | 8,805 | 4,017 | 6,099 | 12,021 |
| On-the-Job Training - CO2 sector - Over 10 years (jobs) | | 73.6 | 1,117 | 968 | 466 | 705 | 1,324 |
| On-the-Job Training - Coal sector - None (jobs) | | 3,482 | 920 | 508 | 449 | 409 | 364 |
| On-the-Job Training - Coal sector - Up to 1 year (jobs) | | 48,368 | 13,561 | 8,004 | 6,974 | 6,249 | 5,487 |
| On-the-Job Training - Coal sector - 1 to 4 years (jobs) | | 13,959 | 3,773 | 1,915 | 1,664 | 1,488 | 1,303 |
| On-the-Job Training - Coal sector - 4 to 10 years (jobs) | | 4,129 | 1,040 | 423 | 364 | 321 | 278 |
| On-the-Job Training - Coal sector - Over 10 years (jobs) | | 473 | 131 | 70.7 | 63.5 | 58.8 | 53.4 |
| On-the-Job Training - Grid sector - None (jobs) | | 24,650 | 34,374 | 44,027 | 49,854 | 67,624 | 91,175 |
| On-the-Job Training - Grid sector - Up to 1 year (jobs) | | 323,388 | 451,411 | 578,739 | 655,925 | 890,481 | 1,201,576 |
| On-the-Job Training - Grid sector - 1 to 4 years (jobs) | | 113,141 | 158,115 | 202,937 | 230,240 | 312,877 | 422,566 |
| On-the-Job Training - Grid sector - 4 to 10 years (jobs) | | 38,452 | 53,786 | 69,094 | 78,459 | 106,711 | 144,245 |

Table 67: E-B+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-----------|-----------|-----------|-----------|-----------|-----------|
| On-the-Job Training - Grid sector - Over 10 years (jobs) | | 4,037 | 5,647 | 7,256 | 8,242 | 11,213 | 15,164 |
| On-the-Job Training - Natural gas sector - None (jobs) | | 28,684 | 21,298 | 15,625 | 13,203 | 10,325 | 7,627 |
| On-the-Job Training - Natural gas sector - Up to 1 year (jobs) | | 354,836 | 266,458 | 197,880 | 169,143 | 133,336 | 99,109 |
| On-the-Job Training - Natural gas sector - 1 to 4 years (jobs) | | 121,834 | 92,143 | 69,337 | 60,467 | 48,262 | 36,243 |
| On-the-Job Training - Natural gas sector - 4 to 10 years (jobs) | | 39,144 | 29,923 | 22,892 | 20,410 | 16,507 | 12,526 |
| On-the-Job Training - Natural gas sector - Over 10 years (jobs) | | 5,223 | 3,920 | 2,912 | 2,479 | 1,953 | 1,456 |
| On-the-Job Training - Nuclear sector - None (jobs) | | 3,292 | 3,102 | 2,765 | 2,354 | 2,052 | 2,910 |
| On-the-Job Training - Nuclear sector - Up to 1 year (jobs) | | 33,436 | 31,510 | 28,086 | 23,915 | 20,844 | 29,562 |
| On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) | | 9,490 | 8,956 | 7,994 | 6,816 | 5,949 | 8,449 |
| On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) | | 2,289 | 2,160 | 1,928 | 1,645 | 1,436 | 2,039 |
| On-the-Job Training - Nuclear sector - Over 10 years (jobs) | | 510 | 482 | 430 | 367 | 321 | 456 |
| On-the-Job Training - Oil sector - None (jobs) | | 48,246 | 42,447 | 37,430 | 32,611 | 27,298 | 16,745 |
| On-the-Job Training - Oil sector - Up to 1 year (jobs) | | 558,269 | 498,517 | 446,256 | 394,637 | 335,590 | 208,628 |
| On-the-Job Training - Oil sector - 1 to 4 years (jobs) | | 144,508 | 129,357 | 116,100 | 102,947 | 87,812 | 54,740 |
| On-the-Job Training - Oil sector - 4 to 10 years (jobs) | | 34,136 | 30,881 | 28,017 | 25,127 | 21,637 | 13,669 |
| On-the-Job Training - Oil sector - Over 10 years (jobs) | | 7,740 | 6,934 | 6,229 | 5,530 | 4,722 | 2,949 |
| On-the-Job Training - Solar PV sector - None (jobs) | | 21,889 | 30,765 | 31,896 | 32,410 | 39,407 | 62,392 |
| On-the-Job Training - Solar PV sector - Up to 1 year (jobs) | | 239,068 | 336,411 | 343,648 | 344,860 | 418,556 | 661,339 |
| On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) | | 78,537 | 109,117 | 111,549 | 111,719 | 134,157 | 209,821 |
| On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) | | 26,697 | 36,501 | 37,966 | 38,462 | 45,718 | 70,815 |
| On-the-Job Training - Solar PV sector - Over 10 years (jobs) | | 4,494 | 6,197 | 6,170 | 6,023 | 7,137 | 11,006 |
| On-the-Job Training - Wind sector - None (jobs) | | 12,926 | 22,598 | 27,064 | 28,040 | 35,710 | 47,852 |
| On-the-Job Training - Wind sector - Up to 1 year (jobs) | | 152,469 | 265,615 | 312,448 | 316,864 | 404,987 | 544,700 |
| On-the-Job Training - Wind sector - 1 to 4 years (jobs) | | 47,539 | 82,521 | 98,017 | 100,602 | 127,275 | 169,537 |
| On-the-Job Training - Wind sector - 4 to 10 years (jobs) | | 14,476 | 25,177 | 31,144 | 33,489 | 41,713 | 54,701 |
| On-the-Job Training - Wind sector - Over 10 years (jobs) | | 2,642 | 4,518 | 5,143 | 5,005 | 6,297 | 8,347 |
| On-Site or In-Plant Training - All sectors - None (jobs) | | 429,061 | 489,111 | 512,721 | 518,562 | 607,898 | 770,522 |
| On-Site or In-Plant Training - All sectors - Up to 1 year (jobs) | | 1,613,963 | 1,823,107 | 1,907,229 | 1,921,889 | 2,243,904 | 2,820,387 |
| On-Site or In-Plant Training - All sectors - 1 to 4 years (jobs) | | 422,330 | 486,069 | 508,860 | 512,095 | 603,152 | 765,793 |
| On-Site or In-Plant Training - All sectors - 4 to 10 years (jobs) | | 171,713 | 200,758 | 212,661 | 216,486 | 256,577 | 328,119 |

Table 67: E-B+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|-----------|
| On-Site or In-Plant Training - All sectors - Over 10 years (jobs) | | 20,877 | 24,829 | 26,467 | 26,979 | 32,254 | 41,506 |
| On-Site or In-Plant Training - Biomass sector - None (jobs) | | 13,603 | 16,961 | 29,104 | 42,115 | 53,377 | 67,470 |
| On-Site or In-Plant Training - Biomass sector - Up to 1 year (jobs) | | 58,813 | 71,291 | 115,204 | 158,414 | 195,521 | 247,019 |
| On-Site or In-Plant Training - Biomass sector - 1 to 4 years (jobs) | | 8,490 | 10,509 | 18,437 | 26,783 | 34,224 | 43,693 |
| On-Site or In-Plant Training - Biomass sector - 4 to 10 years (jobs) | | 2,644 | 3,234 | 6,114 | 9,424 | 12,463 | 16,088 |
| On-Site or In-Plant Training - Biomass sector - Over 10 years (jobs) | | 586 | 671 | 1,075 | 1,486 | 1,863 | 2,403 |
| On-Site or In-Plant Training - CO2 sector - None (jobs) | | 1,126 | 16,898 | 14,719 | 7,184 | 10,807 | 19,874 |
| On-Site or In-Plant Training - CO2 sector - Up to 1 year (jobs) | | 4,125 | 61,774 | 53,861 | 26,345 | 39,594 | 72,583 |
| On-Site or In-Plant Training - CO2 sector - 1 to 4 years (jobs) | | 1,357 | 20,707 | 17,740 | 8,386 | 12,664 | 24,047 |
| On-Site or In-Plant Training - CO2 sector - 4 to 10 years (jobs) | | 668 | 10,330 | 8,747 | 4,038 | 6,119 | 11,913 |
| On-Site or In-Plant Training - CO2 sector - Over 10 years (jobs) | | 79.4 | 1,229 | 1,037 | 475 | 720 | 1,408 |
| On-Site or In-Plant Training - Coal sector - None (jobs) | | 10,380 | 2,741 | 1,420 | 1,262 | 1,154 | 1,034 |
| On-Site or In-Plant Training - Coal sector - Up to 1 year (jobs) | | 44,315 | 12,498 | 7,424 | 6,450 | 5,763 | 5,046 |
| On-Site or In-Plant Training - Coal sector - 1 to 4 years (jobs) | | 10,991 | 3,009 | 1,599 | 1,387 | 1,238 | 1,082 |
| On-Site or In-Plant Training - Coal sector - 4 to 10 years (jobs) | | 4,217 | 1,054 | 430 | 373 | 332 | 289 |
| On-Site or In-Plant Training - Coal sector - Over 10 years (jobs) | | 508 | 124 | 47.4 | 42.2 | 38.6 | 34.7 |
| On-Site or In-Plant Training - Grid sector - None (jobs) | | 76,700 | 106,866 | 136,759 | 154,718 | 209,668 | 282,415 |
| On-Site or In-Plant Training - Grid sector - Up to 1 year (jobs) | | 296,816 | 414,506 | 531,661 | 602,830 | 818,749 | 1,105,248 |
| On-Site or In-Plant Training - Grid sector - 1 to 4 years (jobs) | | 86,993 | 121,633 | 156,191 | 177,294 | 241,049 | 325,721 |
| On-Site or In-Plant Training - Grid sector - 4 to 10 years (jobs) | | 38,206 | 53,408 | 68,566 | 77,810 | 105,764 | 142,877 |
| On-Site or In-Plant Training - Grid sector - Over 10 years (jobs) | | 4,952 | 6,919 | 8,877 | 10,068 | 13,677 | 18,464 |
| On-Site or In-Plant Training - Natural gas sector - None (jobs) | | 87,524 | 65,527 | 48,636 | 41,762 | 32,988 | 24,543 |
| On-Site or In-Plant Training - Natural gas sector - Up to 1 year (jobs) | | 323,555 | 243,038 | 180,589 | 154,459 | 121,820 | 90,603 |
| On-Site or In-Plant Training - Natural gas sector - 1 to 4 years (jobs) | | 92,637 | 70,073 | 52,690 | 45,840 | 36,543 | 27,423 |
| On-Site or In-Plant Training - Natural gas sector - 4 to 10 years (jobs) | | 41,127 | 31,357 | 23,855 | 21,069 | 16,949 | 12,811 |
| On-Site or In-Plant Training - Natural gas sector - Over 10 years (jobs) | | 4,878 | 3,747 | 2,877 | 2,572 | 2,083 | 1,580 |
| On-Site or In-Plant Training - Nuclear sector - None (jobs) | | 8,774 | 8,263 | 7,361 | 6,264 | 5,457 | 7,735 |
| On-Site or In-Plant Training - Nuclear sector - Up to 1 year (jobs) | | 30,147 | 28,419 | 25,337 | 21,581 | 18,815 | 26,691 |
| On-Site or In-Plant Training - Nuclear sector - 1 to 4 years (jobs) | | 7,233 | 6,827 | 6,095 | 5,197 | 4,537 | 6,444 |
| On-Site or In-Plant Training - Nuclear sector - 4 to 10 years (jobs) | | 2,618 | 2,470 | 2,205 | 1,880 | 1,640 | 2,330 |

Table 67: E-B+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| On-Site or In-Plant Training - Nuclear sector - Over 10 years (jobs) | | 246 | 231 | 206 | 176 | 153 | 217 |
| On-Site or In-Plant Training - Oil sector - None (jobs) | | 127,669 | 113,154 | 100,523 | 88,217 | 74,442 | 45,938 |
| On-Site or In-Plant Training - Oil sector - Up to 1 year (jobs) | | 502,634 | 448,835 | 401,801 | 355,364 | 302,214 | 187,936 |
| On-Site or In-Plant Training - Oil sector - 1 to 4 years (jobs) | | 116,834 | 104,736 | 94,131 | 83,578 | 71,372 | 44,546 |
| On-Site or In-Plant Training - Oil sector - 4 to 10 years (jobs) | | 41,199 | 37,215 | 33,709 | 30,174 | 25,955 | 16,347 |
| On-Site or In-Plant Training - Oil sector - Over 10 years (jobs) | | 4,563 | 4,197 | 3,868 | 3,520 | 3,075 | 1,964 |
| On-Site or In-Plant Training - Solar PV sector - None (jobs) | | 63,208 | 88,743 | 91,068 | 91,701 | 111,160 | 175,435 |
| On-Site or In-Plant Training - Solar PV sector - Up to 1 year (jobs) | | 216,902 | 304,840 | 311,470 | 312,556 | 378,985 | 598,282 |
| On-Site or In-Plant Training - Solar PV sector - 1 to 4 years (jobs) | | 61,169 | 85,065 | 86,877 | 86,956 | 104,488 | 163,523 |
| On-Site or In-Plant Training - Solar PV sector - 4 to 10 years (jobs) | | 26,264 | 35,980 | 37,340 | 37,770 | 44,944 | 69,685 |
| On-Site or In-Plant Training - Solar PV sector - Over 10 years (jobs) | | 3,141 | 4,363 | 4,474 | 4,493 | 5,398 | 8,447 |
| On-Site or In-Plant Training - Wind sector - None (jobs) | | 40,076 | 69,957 | 83,132 | 85,339 | 108,846 | 146,078 |
| On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) | | 136,658 | 237,906 | 279,884 | 283,891 | 362,441 | 486,978 |
| On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | | 36,627 | 63,510 | 75,101 | 76,673 | 97,038 | 129,314 |
| On-Site or In-Plant Training - Wind sector - 4 to 10 years (jobs) | | 14,768 | 25,710 | 31,694 | 33,949 | 42,411 | 55,779 |
| On-Site or In-Plant Training - Wind sector - Over 10 years (jobs) | | 1,924 | 3,347 | 4,005 | 4,147 | 5,246 | 6,988 |
| Wage income - Biomass (million \$2019) | | 4,370 | 5,504 | 9,694 | 14,467 | 18,822 | 24,312 |
| Wage income - CO2 (million \$2019) | | 460 | 6,961 | 6,170 | 3,083 | 4,704 | 8,683 |
| Wage income - Coal (million \$2019) | | 4,260 | 1,154 | 608 | 538 | 490 | 438 |
| Wage income - Grid (million \$2019) | | 31,499 | 44,573 | 57,955 | 66,639 | 91,821 | 125,797 |
| Wage income - Natural Gas (million \$2019) | | 36,422 | 27,768 | 20,930 | 18,149 | 14,518 | 10,952 |
| Wage income - Nuclear (million \$2019) | | 3,504 | 3,382 | 3,089 | 2,697 | 2,412 | 3,511 |
| Wage income - Oil (million \$2019) | | 52,195 | 47,217 | 42,805 | 38,319 | 33,009 | 20,749 |
| Wage income - Solar (million \$2019) | | 20,872 | 29,628 | 30,879 | 31,591 | 38,846 | 62,249 |
| Wage income - Wind (million \$2019) | | 13,724 | 24,323 | 29,582 | 31,168 | 40,333 | 54,951 |

Table 68: E-B+ scenario - IMPACTS - Fossil fuel industries

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|--------|--------|--------|--------|--------|---------|
| Oil consumption - Annual (million bbls) | | 5,987 | 5,545 | 5,112 | 4,688 | 3,810 | 2,612 |
| Oil consumption - Cumulative (million bbls) | | | | | | | 152,170 |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 5,074 | 4,856 | 3,195 |
| Oil production - Cumulative (million bbls) | | | | | | | 151,760 |
| Natural gas consumption - Annual (tcf) | | 22,870 | 18,067 | 14,168 | 11,671 | 9,024 | 6,935 |
| Natural gas consumption - Cumulative (tcf) | | | | | | | 468,505 |
| Natural gas production - Annual (tcf) | | 35,855 | 32,336 | 26,667 | 22,472 | 19,164 | 16,450 |
| Natural gas production - Cumulative (tcf) | | | | | | | 830,136 |

Table 69: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Final energy use - Transportation (PJ) | 28,030 | 26,603 | 24,463 | 22,703 | 21,315 | 19,677 | 17,739 |

Table 69: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Overview (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Final energy use - Residential (PJ) | 11,788 | 11,126 | 10,656 | 10,151 | 9,457 | 8,609 | 7,786 |
| Final energy use - Commercial (PJ) | 9,015 | 8,958 | 8,853 | 8,731 | 8,513 | 8,263 | 8,058 |
| Final energy use - Industry (PJ) | 25,084 | 26,117 | 26,456 | 26,354 | 26,498 | 26,178 | 25,748 |

Table 70: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Electricity distribution capital invested - Cumulative 5-yr (billion \$2018) | | 149 | 150 | 201 | 208 | 298 | 315 |

Table 71: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Transportation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|-------|-------|--------|--------|---------|---------|
| Vehicle sales - Light-duty - EV (%) | 4.05 | 6.4 | 12.6 | 27.1 | 49.7 | 72.9 | 87.9 |
| Vehicle sales - Light-duty - gasoline (%) | 89.4 | 85.5 | 78.4 | 65.1 | 44.7 | 23.9 | 10.6 |
| Vehicle sales - Light-duty - hybrid (%) | 4.99 | 5.79 | 6.54 | 5.88 | 4.34 | 2.52 | 1.21 |
| Vehicle sales - Light-duty - diesel (%) | 1.39 | 1.82 | 2.03 | 1.61 | 1.02 | 0.519 | 0.223 |
| Vehicle sales - Light-duty - hydrogen FC (%) | 0.11 | 0.371 | 0.317 | 0.239 | 0.168 | 0.092 | 0.043 |
| Vehicle sales - Light-duty - other (%) | 0.095 | 0.098 | 0.09 | 0.078 | 0.056 | 0.03 | 0.014 |
| Vehicle sales - Medium-duty - EV (%) | 0.664 | 1.94 | 5.49 | 14.3 | 31.4 | 52.6 | 68 |
| Vehicle sales - Medium-duty - gasoline (%) | 33.8 | 34.7 | 34.7 | 31.9 | 24.4 | 14.2 | 6.33 |
| Vehicle sales - Medium-duty - hybrid (%) | 0.363 | 0.418 | 0.464 | 0.478 | 0.414 | 0.275 | 0.141 |
| Vehicle sales - Medium-duty - diesel (%) | 64.8 | 62.2 | 57.7 | 49.4 | 35.6 | 19.6 | 8.37 |
| Vehicle sales - Medium-duty - hydrogen FC (%) | 0.166 | 0.485 | 1.37 | 3.58 | 7.86 | 13.2 | 17 |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.266 | 0.279 | 0.286 | 0.258 | 0.184 | 0.102 |
| Vehicle sales - Heavy-duty - diesel (%) | 97.4 | 96 | 91.3 | 79.8 | 58.2 | 32.1 | 13.7 |
| Vehicle sales - Heavy-duty - EV (%) | 0.498 | 1.45 | 4.11 | 10.8 | 23.6 | 39.5 | 51 |
| Vehicle sales - Heavy-duty - gasoline (%) | 0.228 | 0.236 | 0.239 | 0.225 | 0.179 | 0.109 | 0.051 |
| Vehicle sales - Heavy-duty - hybrid (%) | 0.083 | 0.094 | 0.104 | 0.107 | 0.092 | 0.06 | 0.03 |
| Vehicle sales - Heavy-duty - hydrogen FC (%) | 0.332 | 0.969 | 2.74 | 7.17 | 15.7 | 26.3 | 34 |
| Vehicle sales - Heavy-duty - other (%) | 1.5 | 1.28 | 1.46 | 1.95 | 2.25 | 1.96 | 1.14 |
| Light-duty vehicle capital costs vs. REF - Cumulative 5-yr (million \$2018) | | 0 | 8,683 | 17,455 | 59,707 | 185,491 | 271,068 |
| Public EV charging plugs - DC Fast (1000 units) | 14.4 | | 31.9 | | 147 | | 402 |
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 766 | | 3,537 | | 9,670 |

Table 72: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Residential

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Sales of space heating units - Electric Heat Pump (%) | 14.6 | 21 | 25.3 | 37.6 | 58.4 | 75.1 | 82.4 |
| Sales of space heating units - Electric Resistance (%) | 20.3 | 24.4 | 23.2 | 19.9 | 14.3 | 10.3 | 8.67 |
| Sales of space heating units - Gas (%) | 55.2 | 40 | 37.7 | 31.1 | 19.6 | 9.59 | 4.95 |
| Sales of space heating units - Fossil (%) | 9.95 | 14.5 | 13.8 | 11.4 | 7.66 | 5.01 | 4.02 |
| Sales of water heating units - Electric Heat Pump (%) | 0 | 1.36 | 5.25 | 16.7 | 35.2 | 49.3 | 55.3 |
| Sales of water heating units - Electric Resistance (%) | 38.4 | 51.5 | 50.3 | 47 | 42.1 | 39.6 | 38.9 |
| Sales of water heating units - Gas Furnace (%) | 58 | 44.5 | 41.9 | 34 | 20.8 | 9.45 | 4.17 |
| Sales of water heating units - Other (%) | 3.58 | 2.63 | 2.51 | 2.27 | 1.91 | 1.68 | 1.62 |
| Sales of cooking units - Electric Resistance (%) | 61.2 | 62.2 | 65.8 | 75.1 | 88.1 | 96.2 | 99 |
| Sales of cooking units - Gas (%) | 38.8 | 37.8 | 34.2 | 24.9 | 11.9 | 3.83 | 1.03 |

Table 72: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Residential (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Residential HVAC investment in 2020s vs. REF - Cumulative 5-yr (billion \$2018) | | 252 | 303 | | | | |

Table 73: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-----------|-----------|------|------|-------|-------|
| Sales of space heating units - Electric Heat Pump (%) | 2.95 | 11.9 | 15.9 | 27.6 | 48.1 | 65.9 | 74.2 |
| Sales of space heating units - Electric Resistance (%) | 7.91 | 8.18 | 8.72 | 10.5 | 13.8 | 16.4 | 17.6 |
| Sales of space heating units - Gas (%) | 85.2 | 76.1 | 71.7 | 59 | 36.6 | 17.1 | 7.89 |
| Sales of space heating units - Fossil (%) | 3.94 | 3.79 | 3.71 | 2.91 | 1.53 | 0.589 | 0.302 |
| Sales of water heating units - Electric Heat Pump (%) | 0.385 | 1.8 | 5.78 | 17.4 | 36.6 | 51.2 | 57.3 |
| Sales of water heating units - Electric Resistance (%) | 3.8 | 4.53 | 6.39 | 12 | 21.9 | 30.4 | 34.4 |
| Sales of water heating units - Gas (%) | 94.1 | 92 | 86.2 | 69 | 40.2 | 17.2 | 7.13 |
| Sales of water heating units - Other (%) | 1.66 | 1.67 | 1.66 | 1.51 | 1.31 | 1.18 | 1.14 |
| Sales of cooking units - Electric Resistance (%) | 32.5 | 36.5 | 41.3 | 53.8 | 71.2 | 81.9 | 85.6 |
| Sales of cooking units - Gas (%) | 67.5 | 63.5 | 58.7 | 46.2 | 28.8 | 18.1 | 14.4 |
| Commercial HVAC investment in 2020s - Cumulative 5-yr (million \$2018) | | 1,046,837 | 1,158,815 | | | | |

Table 74: E-B+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|---------|---------|---------|---------|---------|---------|-----------|
| Installed - Onshore wind (MW) | 97,778 | 194,426 | 370,380 | 515,269 | 613,437 | 779,748 | 1,020,520 |
| Installed - Offshore wind (MW) | 29.3 | 1,005 | 4,962 | 13,173 | 33,174 | 90,306 | 207,350 |
| Installed - Rooftop PV (MW) | 33,317 | 52,523 | 69,448 | 90,809 | 117,114 | 148,351 | 185,890 |
| Installed - Utility-scale PV (MW) | 35,714 | 125,684 | 295,566 | 446,736 | 575,331 | 752,836 | 1,053,909 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Geothermal (MW) | 2,392 | 2,395 | 2,420 | 2,417 | 2,420 | 2,426 | 2,446 |
| Installed - Nuclear (MW) | 98,481 | 95,135 | 90,008 | 76,069 | 68,456 | 56,274 | 56,682 |
| Installed - Ccgt & gas steam (MW) | 334,478 | 316,742 | 319,849 | 311,404 | 252,180 | 173,113 | 145,943 |
| Installed - Ccgt w cc (MW) | 0 | 0 | 45.2 | 4,211 | 7,837 | 13,514 | 25,116 |
| Installed - Ct (MW) | 146,590 | 139,058 | 120,032 | 114,037 | 120,046 | 165,945 | 194,030 |
| Installed - Biomass (MW) | 10,005 | 9,140 | 7,852 | 6,129 | 4,704 | 3,387 | 2,483 |
| Installed - Biomass w cc (MW) | 0 | 0 | 9,955 | 23,417 | 47,848 | 60,968 | 66,453 |
| Installed - Coal (MW) | 215,959 | 52,040 | 132 | 129 | 105 | 90.8 | 47.3 |
| Installed - Other (MW) | 68,061 | 57,088 | 55,241 | 53,843 | 52,087 | 51,085 | 49,630 |
| Installed - Grid battery storage (MW) | | 890 | 1,834 | 10,282 | 32,471 | 86,943 | 123,183 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |

Table 75: E-B+ scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|
| Onshore wind (TWh) | 412 | 794 | 1,536 | 2,051 | 2,391 | 3,054 | 3,994 |
| Offshore wind (TWh) | 0.092 | 3.73 | 20.2 | 63.9 | 146 | 394 | 885 |
| Rooftop PV (TWh) | 50.1 | 79.4 | 101 | 127 | 167 | 212 | 256 |
| Utility-scale PV (TWh) | 90.4 | 305 | 681 | 1,014 | 1,286 | 1,690 | 2,290 |
| Hydro (TWh) | 300 | 312 | 295 | 294 | 301 | 292 | 293 |
| Geothermal (TWh) | 14.5 | 14.5 | 14.3 | 14.2 | 13.6 | 13.6 | 13.5 |
| Nuclear (TWh) | 802 | 775 | 733 | 620 | 558 | 458 | 463 |
| Gas (TWh) | 1,492 | 1,655 | 1,062 | 582 | 369 | 195 | 94.1 |
| Gas w cc (TWh) | 0 | 0 | 0.221 | 26.2 | 35.4 | 50.5 | 83 |
| Biomass (TWh) | 18.1 | 21.4 | 39.6 | 23.5 | 15.6 | 6.71 | 0.45 |
| Biomass w cc (TWh) | 0 | 0 | 74.1 | 174 | 356 | 454 | 493 |
| Coal (TWh) | 980 | 280 | 0.461 | 0.452 | 0.368 | 0.318 | 0.166 |

Table 76: *E-B+ scenario - PILLAR 3: Clean fuels - Bioenergy*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - Biopower (1000 tonnes) | 10,249 | 24,177 | 56,258 | 40,450 | 30,444 | 12,725 | 636 |
| Biomass input - Biopower w/ cc (1000 tonnes) | 0 | 0 | 44,765 | 105,109 | 214,980 | 273,940 | 297,408 |
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 161,322 | 336,108 | 552,980 | 641,173 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 107 | 122 | 124 | 99.1 |
| Biomass input - Bio-FT w/ CC (1000 tonnes) | 0 | 0 | 0 | 151 | 192 | 227 | 279 |
| Biomass input - Pyrolysis liquids (1000 tonnes) | 0 | 0 | 0 | 212 | 316 | 1,714 | 123,715 |
| Biomass input - Pyrolysis liquids w/ cc (1000 tonnes) | 0 | 0 | 0 | 158 | 219 | 299 | 56,876 |
| Biomass input - SNG (1000 tonnes) | 0 | 9.94 | 18.5 | 8.41 | 8.23 | 7.31 | 3.45 |
| Biomass input - Bio-SNG w/ CC (1000 tonnes) | 0 | 0 | 38.5 | 22.5 | 15.4 | 14.5 | 11.9 |
| Biomass input - Ethanol (1000 tonnes) | 129,506 | 129,506 | 129,537 | 125,006 | 67,634 | 10,261 | 905 |
| Number of facilities - Power (quantity) | 0 | 12 | 16 | 16 | 17 | 17 | 17 |
| Number of facilities - Power ccu (quantity) | 0 | 0 | 67 | 148 | 296 | 379 | 413 |
| Number of facilities - Allam power w ccu (quantity) | 0 | 0 | 0 | 14 | 24 | 33 | 42 |
| Number of facilities - Beccs hydrogen (quantity) | 0 | 0 | 0 | 217 | 453 | 742 | 858 |
| Number of facilities - Diesel (quantity) | 0 | 0 | 0 | 14 | 16 | 18 | 20 |
| Number of facilities - Diesel ccu (quantity) | 0 | 0 | 0 | 14 | 24 | 35 | 39 |
| Number of facilities - Pyrolysis (quantity) | 0 | 0 | 0 | 14 | 16 | 19 | 178 |
| Number of facilities - Pyrolysis ccu (quantity) | 0 | 0 | 0 | 14 | 24 | 35 | 119 |
| Number of facilities - Sng (quantity) | 0 | 14 | 15 | 15 | 15 | 16 | 17 |
| Number of facilities - Sng ccu (quantity) | 0 | 0 | 14 | 14 | 14 | 16 | 19 |

Table 77: *E-B+ scenario - PILLAR 4: CCUS - CO2 pipelines*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|--------|---------|---------|---------|---------|
| Trunk (km) | | 708 | 14,170 | 21,713 | 25,426 | 25,426 | 25,426 |
| Spur (km) | | 0 | 5,992 | 25,136 | 45,143 | 68,934 | 85,735 |
| All (km) | | 708 | 20,162 | 46,849 | 70,569 | 94,360 | 111,162 |
| Cumulative investment - Trunk (million \$2018) | | 3,706 | 68,664 | 109,640 | 134,549 | 135,923 | 135,923 |
| Cumulative investment - Spur (million \$2018) | | 0 | 5,264 | 24,259 | 46,256 | 73,186 | 88,637 |
| Cumulative investment - All (million \$2018) | | 3,706 | 73,928 | 133,899 | 180,805 | 209,109 | 224,560 |

Table 78: *E-B+ scenario - PILLAR 4: CCUS - CO2 storage*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|--------|--------|--------|--------|--------|
| Annual (MMT) | 0 | 1.77 | 98.8 | 477 | 941 | 1,281 | 1,361 |
| Injection wells (wells) | | 0 | 124 | 553 | 966 | 1,582 | 1,993 |
| Resource characterization, appraisal, permitting costs (million \$2020) | | 1,500 | 12,421 | 19,310 | 19,310 | 19,310 | 19,310 |
| Wells and facilities construction costs (million \$2020) | | 0 | 3,766 | 16,623 | 29,044 | 47,564 | 59,759 |

Table 79: E-B+ scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------------|
| Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -24,500 |
| Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) | | | | | | | -14,000 |
| Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) | | | | | | | -116,000 |
| Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) | | | | | | | -29,000 |
| Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -100,000 |
| Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -21,000 |
| Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) | | | | | | | -121,000 |
| Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) | | | | | | | -20,000 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - 505,500 |
| Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -36,700 |
| Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) | | | | | | | -49,000 |
| Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) | | | | | | | -209,000 |
| Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) | | | | | | | -42,500 |
| Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) | | | | | | | - 200,000 |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -40,500 |
| Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | | | | | | | -181,500 |
| Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) | | | | | | | -142,000 |
| Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) | | | | | | | -119,000 |
| Carbon sink potential - Mid - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - 1,020,200 |
| Carbon sink potential - High - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -48,900 |
| Carbon sink potential - High - Avoid deforestation (1000 tCO2e/y) | | | | | | | -84,000 |
| Carbon sink potential - High - Extend rotation length (1000 tCO2e/y) | | | | | | | -302,000 |
| Carbon sink potential - High - Improve plantations (1000 tCO2e/y) | | | | | | | -57,000 |
| Carbon sink potential - High - Increase retention of HWP (1000 tCO2e/y) | | | | | | | - 300,000 |
| Carbon sink potential - High - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - High - Reforest cropland (1000 tCO2e/y) | | | | | | | -242,000 |
| Carbon sink potential - High - Reforest pasture (1000 tCO2e/y) | | | | | | | - 264,000 |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - 1,535,900 |
| Carbon sink potential - High - Restore productivity (1000 tCO2e/y) | | | | | | | -178,000 |

Table 79: E-B+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - Low - Accelerate regeneration (1000 hectares) | | | | | | | 4,000 |
| Land impacted for carbon sink potential - Low - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 10,677 |
| Land impacted for carbon sink potential - Low - Extend rotation length (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 hectares) | | | | | | | 10,500 |
| Land impacted for carbon sink potential - Low - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Low - Increase trees outside forests (1000 hectares) | | | | | | | 3,000 |
| Land impacted for carbon sink potential - Low - Reforest cropland (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 1,300 |
| Land impacted for carbon sink potential - Low - Restore productivity (1000 hectares) | | | | | | | 35,700 |
| Land impacted for carbon sink potential - Low - Total impacted (over 30 years) (1000 hectares) | | | | | | | 132,177 |
| Land impacted for carbon sink potential - Mid - Accelerate regeneration (1000 hectares) | | | | | | | 6,000 |
| Land impacted for carbon sink potential - Mid - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,025 |
| Land impacted for carbon sink potential - Mid - Extend rotation length (1000 hectares) | | | | | | | 106,500 |
| Land impacted for carbon sink potential - Mid - Improve plantations (1000 hectares) | | | | | | | 15,800 |
| Land impacted for carbon sink potential - Mid - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Mid - Increase trees outside forests (1000 hectares) | | | | | | | 4,350 |
| Land impacted for carbon sink potential - Mid - Reforest cropland (1000 hectares) | | | | | | | 12,000 |
| Land impacted for carbon sink potential - Mid - Reforest pasture (1000 hectares) | | | | | | | 9,400 |
| Land impacted for carbon sink potential - Mid - Restore productivity (1000 hectares) | | | | | | | 71,900 |
| Land impacted for carbon sink potential - Mid - Total impacted (over 30 years) (1000 hectares) | | | | | | | 236,975 |
| Land impacted for carbon sink potential - High - Accelerate regeneration (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - High - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,373 |

Table 79: E-B+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - High - Extend rotation length (1000 hectares) | | | | | | | 154,000 |
| Land impacted for carbon sink potential - High - Improve plantations (1000 hectares) | | | | | | | 21,000 |
| Land impacted for carbon sink potential - High - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - High - Increase trees outside forests (1000 hectares) | | | | | | | 5,700 |
| Land impacted for carbon sink potential - High - Reforest cropland (1000 hectares) | | | | | | | 16,000 |
| Land impacted for carbon sink potential - High - Reforest pasture (1000 hectares) | | | | | | | 7,500 |
| Land impacted for carbon sink potential - High - Restore productivity (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - High - Total impacted (over 30 years) (1000 hectares) | | | | | | | 282,573 |

Table 80: E-B+ scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Moderate deployment - Corn-ethanol to energy grasses (1000 tCO ₂ e/y) | | | | | | | -38,876 |
| Carbon sink potential - Moderate deployment - Cropland measures (1000 tCO ₂ e/y) | | | | | | | -98,674 |
| Carbon sink potential - Moderate deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -3,397 |
| Carbon sink potential - Moderate deployment - Cropland to woody energy crops (1000 tCO ₂ e/y) | | | | | | | 0 |
| Carbon sink potential - Moderate deployment - Pasture to energy crops (1000 tCO ₂ e/y) | | | | | | | 0 |
| Carbon sink potential - Moderate deployment - Total (1000 tCO ₂ e/y) | | | | | | | -140,947 |
| Carbon sink potential - Aggressive deployment - Corn-ethanol to energy grasses (1000 tCO ₂ e/y) | | | | | | | -38,876 |
| Carbon sink potential - Aggressive deployment - Cropland measures (1000 tCO ₂ e/y) | | | | | | | -188,807 |
| Carbon sink potential - Aggressive deployment - Permanent conservation cover (1000 tCO ₂ e/y) | | | | | | | -6,794 |
| Carbon sink potential - Aggressive deployment - Cropland to woody energy crops (1000 tCO ₂ e/y) | | | | | | | 0 |
| Carbon sink potential - Aggressive deployment - Pasture to energy crops (1000 tCO ₂ e/y) | | | | | | | 0 |
| Carbon sink potential - Aggressive deployment - Total (1000 tCO ₂ e/y) | | | | | | | -234,477 |

Table 80: *E-B+ scenario - PILLAR 6: Land sinks - Agriculture (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink - Moderate deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 21,138 |
| Land impacted for carbon sink - Moderate deployment - Cropland measures (1000 hectares) | | | | | | | 66,454 |
| Land impacted for carbon sink - Moderate deployment - Permanent conservation cover (1000 hectares) | | | | | | | 5,855 |
| Land impacted for carbon sink - Moderate deployment - Cropland to woody energy crops (1000 hectares) | | | | | | | 4,087 |
| Land impacted for carbon sink - Moderate deployment - Pasture to energy crops (1000 hectares) | | | | | | | 14,777 |
| Land impacted for carbon sink - Moderate deployment - Total (1000 hectares) | | | | | | | 112,310 |
| Land impacted for carbon sink - Aggressive deployment - Corn-ethanol to energy grasses (1000 hectares) | | | | | | | 21,138 |
| Land impacted for carbon sink - Aggressive deployment - Cropland measures (1000 hectares) | | | | | | | 313,710 |
| Land impacted for carbon sink - Aggressive deployment - Permanent conservation cover (1000 hectares) | | | | | | | 11,710 |
| Land impacted for carbon sink - Aggressive deployment - Cropland to woody energy crops (1000 hectares) | | | | | | | 4,087 |
| Land impacted for carbon sink - Aggressive deployment - Pasture to energy crops (1000 hectares) | | | | | | | 14,777 |
| Land impacted for carbon sink - Aggressive deployment - Total (1000 hectares) | | | | | | | 365,421 |

Table 81: *E-B+ scenario - PILLAR 6: Land sinks - Total assumed land sink*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|------|-------|-------|
| Total assumed land sink (Gt CO ₂ e/y) | -0.7 | -0.73 | -0.75 | -0.78 | -0.8 | -0.83 | -0.85 |

Table 82: *REF scenario - IMPACTS - Health*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|--------|
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | | 8,024 | 4,920 | 3,923 | 3,545 | 3,381 | 3,176 |
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | | 1,336 | 1,314 | 1,574 | 1,555 | 1,571 | 1,517 |
| Premature deaths from air pollution - Mobile - On-Road (deaths) | | 11,702 | 12,181 | 12,657 | 13,199 | 13,743 | 14,295 |
| Premature deaths from air pollution - Gas Stations (deaths) | | 676 | 700 | 721 | 747 | 772 | 795 |
| Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | | 2,152 | 2,047 | 1,976 | 1,955 | 1,967 | 1,975 |
| Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | | 546 | 464 | 337 | 226 | 147 | 103 |
| Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | | 191 | 193 | 197 | 203 | 207 | 210 |

Table 82: *REF scenario - IMPACTS - Health (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|---------|
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 110 | 110 | 110 | 110 | 109 | 108 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 1,456 | 1,478 | 1,430 | 1,377 | 1,394 | 1,482 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 361 | 344 | 318 | 281 | 259 | 247 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 177 | 183 | 190 | 196 | 202 | 207 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 153 | 110 | 92.2 | 87.6 | 85 | 80.1 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 3,833 | 4,098 | 4,245 | 4,094 | 4,114 | 3,917 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 71,114 | 43,608 | 34,774 | 31,416 | 29,967 | 28,147 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 11,837 | 11,639 | 13,941 | 13,774 | 13,915 | 13,437 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 104,043 | 108,301 | 112,532 | 117,351 | 122,191 | 127,101 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 5,990 | 6,196 | 6,380 | 6,616 | 6,835 | 7,036 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 19,068 | 18,140 | 17,507 | 17,324 | 17,427 | 17,501 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 4,842 | 4,108 | 2,983 | 2,005 | 1,304 | 910 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 1,695 | 1,709 | 1,746 | 1,799 | 1,835 | 1,862 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 973 | 976 | 976 | 972 | 966 | 955 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 12,886 | 13,084 | 12,660 | 12,193 | 12,344 | 13,118 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 3,197 | 3,047 | 2,813 | 2,490 | 2,290 | 2,183 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 1,570 | 1,622 | 1,681 | 1,735 | 1,787 | 1,837 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 1,347 | 974 | 813 | 773 | 750 | 707 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 34,036 | 36,393 | 37,698 | 36,352 | 36,536 | 34,785 |

Table 83: *REF scenario - IMPACTS - Jobs*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|---------|
| By economic sector - Agriculture (jobs) | | 31,901 | 31,368 | 31,313 | 30,472 | 30,467 | 30,778 |
| By economic sector - Construction (jobs) | | 449,662 | 448,696 | 500,764 | 539,089 | 561,514 | 657,380 |

Table 83: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|-----------|
| By economic sector - Manufacturing (jobs) | | 298,392 | 310,515 | 333,104 | 336,058 | 313,850 | 321,745 |
| By economic sector - Mining (jobs) | | 481,485 | 400,603 | 333,553 | 269,133 | 224,097 | 177,285 |
| By economic sector - Other (jobs) | | 35,017 | 35,277 | 44,788 | 53,423 | 60,095 | 95,270 |
| By economic sector - Pipeline (jobs) | | 46,537 | 48,395 | 49,114 | 46,834 | 47,106 | 45,678 |
| By economic sector - Professional (jobs) | | 274,750 | 264,423 | 279,357 | 301,235 | 313,032 | 359,090 |
| By economic sector - Trade (jobs) | | 278,534 | 253,984 | 250,915 | 253,455 | 254,836 | 283,916 |
| By economic sector - Utilities (jobs) | | 435,375 | 425,089 | 469,308 | 506,490 | 522,410 | 550,918 |
| By resource sector - Biomass (jobs) | | 82,434 | 79,427 | 76,547 | 73,317 | 72,403 | 71,509 |
| By resource sector - CO2 (jobs) | | | 1.03 | 1.31 | 1.41 | 1.55 | 1.66 |
| By resource sector - Coal (jobs) | | 117,264 | 72,102 | 50,758 | 42,743 | 38,286 | 33,441 |
| By resource sector - Grid (jobs) | | 457,965 | 464,310 | 559,946 | 622,725 | 656,659 | 744,741 |
| By resource sector - Natural Gas (jobs) | | 570,260 | 562,626 | 562,154 | 548,271 | 541,238 | 504,129 |
| By resource sector - Nuclear (jobs) | | 49,007 | 46,204 | 41,200 | 35,099 | 30,010 | 24,657 |
| By resource sector - Oil (jobs) | | 795,394 | 714,448 | 648,289 | 589,677 | 544,285 | 474,550 |
| By resource sector - Solar (jobs) | | 172,816 | 163,280 | 212,479 | 231,201 | 246,839 | 446,301 |
| By resource sector - Wind (jobs) | | 86,514 | 115,953 | 140,841 | 193,154 | 197,686 | 222,730 |
| By education level - All sectors - High school diploma or less (jobs) | | 967,124 | 923,201 | 960,029 | 980,306 | 978,356 | 1,064,576 |
| By education level - All sectors - Associates degree or some college (jobs) | | 688,935 | 660,421 | 692,108 | 713,776 | 716,169 | 785,076 |
| By education level - All sectors - Bachelors degree (jobs) | | 529,597 | 497,665 | 501,785 | 502,696 | 494,679 | 524,269 |
| By education level - All sectors - Masters or professional degree (jobs) | | 127,756 | 119,934 | 121,054 | 121,929 | 120,748 | 129,149 |
| By education level - All sectors - Doctoral degree (jobs) | | 18,244 | 17,130 | 17,241 | 17,483 | 17,456 | 18,992 |
| By education level - Biomass sector - High school diploma or less (jobs) | | 47,731 | 46,172 | 44,960 | 43,255 | 42,721 | 42,422 |
| By education level - Biomass sector - Associates degree or some college (jobs) | | 15,721 | 15,116 | 14,471 | 13,823 | 13,632 | 13,402 |
| By education level - Biomass sector - Bachelors degree (jobs) | | 14,337 | 13,667 | 12,869 | 12,186 | 12,012 | 11,712 |
| By education level - Biomass sector - Masters or professional degree (jobs) | | 3,946 | 3,803 | 3,617 | 3,454 | 3,441 | 3,386 |
| By education level - Biomass sector - Doctoral degree (jobs) | | 698 | 670 | 631 | 598 | 598 | 587 |
| By education level - CO2 sector - High school diploma or less (jobs) | | | 0.368 | 0.468 | 0.503 | 0.555 | 0.591 |
| By education level - CO2 sector - Associates degree or some college (jobs) | | | 0.287 | 0.366 | 0.393 | 0.435 | 0.463 |
| By education level - CO2 sector - Bachelors degree (jobs) | | | 0.287 | 0.365 | 0.393 | 0.435 | 0.464 |
| By education level - CO2 sector - Masters or professional degree (jobs) | | | 0.074 | 0.094 | 0.101 | 0.112 | 0.119 |
| By education level - CO2 sector - Doctoral degree (jobs) | | | 0.012 | 0.015 | 0.016 | 0.018 | 0.019 |
| By education level - Coal sector - High school diploma or less (jobs) | | 53,521 | 32,643 | 22,951 | 19,159 | 16,860 | 14,468 |
| By education level - Coal sector - Associates degree or some college (jobs) | | 34,993 | 21,604 | 15,196 | 12,828 | 11,588 | 10,214 |
| By education level - Coal sector - Bachelors degree (jobs) | | 22,698 | 14,077 | 9,948 | 8,484 | 7,744 | 6,882 |
| By education level - Coal sector - Masters or professional degree (jobs) | | 5,292 | 3,300 | 2,326 | 1,983 | 1,825 | 1,635 |
| By education level - Coal sector - Doctoral degree (jobs) | | 760 | 478 | 338 | 289 | 268 | 242 |
| By education level - Grid sector - High school diploma or less (jobs) | | 194,395 | 198,021 | 239,922 | 268,050 | 283,941 | 323,471 |
| By education level - Grid sector - Associates degree or some college (jobs) | | 152,021 | 154,079 | 185,749 | 206,493 | 217,650 | 246,726 |

Table 83: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|---------|
| By education level - Grid sector - Bachelors degree (jobs) | | 87,116 | 87,720 | 105,070 | 116,065 | 121,574 | 136,971 |
| By education level - Grid sector - Masters or professional degree (jobs) | | 21,921 | 22,004 | 26,275 | 28,937 | 30,220 | 33,946 |
| By education level - Grid sector - Doctoral degree (jobs) | | 2,512 | 2,487 | 2,928 | 3,180 | 3,275 | 3,628 |
| By education level - Natural gas sector - High school diploma or less (jobs) | | 224,113 | 223,226 | 224,560 | 219,540 | 217,980 | 204,472 |
| By education level - Natural gas sector - Associates degree or some college (jobs) | | 183,106 | 181,431 | 182,804 | 180,503 | 179,358 | 167,676 |
| By education level - Natural gas sector - Bachelors degree (jobs) | | 127,562 | 123,827 | 121,511 | 116,438 | 113,191 | 103,983 |
| By education level - Natural gas sector - Masters or professional degree (jobs) | | 31,242 | 30,086 | 29,351 | 28,067 | 27,139 | 24,764 |
| By education level - Natural gas sector - Doctoral degree (jobs) | | 4,238 | 4,055 | 3,927 | 3,724 | 3,570 | 3,234 |
| By education level - Nuclear sector - High school diploma or less (jobs) | | 16,611 | 15,707 | 14,046 | 11,999 | 10,287 | 8,475 |
| By education level - Nuclear sector - Associates degree or some college (jobs) | | 13,382 | 12,619 | 11,255 | 9,591 | 8,202 | 6,741 |
| By education level - Nuclear sector - Bachelors degree (jobs) | | 14,465 | 13,608 | 12,109 | 10,294 | 8,783 | 7,202 |
| By education level - Nuclear sector - Masters or professional degree (jobs) | | 3,915 | 3,677 | 3,266 | 2,772 | 2,361 | 1,933 |
| By education level - Nuclear sector - Doctoral degree (jobs) | | 634 | 593 | 524 | 443 | 376 | 306 |
| By education level - Oil sector - High school diploma or less (jobs) | | 319,890 | 290,042 | 265,879 | 244,649 | 228,550 | 202,090 |
| By education level - Oil sector - Associates degree or some college (jobs) | | 206,894 | 186,432 | 169,741 | 154,947 | 143,556 | 125,658 |
| By education level - Oil sector - Bachelors degree (jobs) | | 213,345 | 189,156 | 169,188 | 151,377 | 137,271 | 117,201 |
| By education level - Oil sector - Masters or professional degree (jobs) | | 48,374 | 42,677 | 37,962 | 33,746 | 30,392 | 25,735 |
| By education level - Oil sector - Doctoral degree (jobs) | | 6,891 | 6,141 | 5,520 | 4,959 | 4,515 | 3,865 |
| By education level - Solar PV sector - High school diploma or less (jobs) | | 77,631 | 72,470 | 93,202 | 100,149 | 105,581 | 188,653 |
| By education level - Solar PV sector - Associates degree or some college (jobs) | | 55,428 | 52,423 | 68,288 | 74,421 | 79,582 | 144,103 |
| By education level - Solar PV sector - Bachelors degree (jobs) | | 30,683 | 29,574 | 39,255 | 43,420 | 47,138 | 86,667 |
| By education level - Solar PV sector - Masters or professional degree (jobs) | | 7,662 | 7,446 | 9,928 | 11,167 | 12,284 | 22,732 |
| By education level - Solar PV sector - Doctoral degree (jobs) | | 1,413 | 1,367 | 1,806 | 2,044 | 2,253 | 4,146 |
| By education level - Wind sector - High school diploma or less (jobs) | | 33,232 | 44,919 | 54,508 | 73,504 | 72,435 | 80,524 |
| By education level - Wind sector - Associates degree or some college (jobs) | | 27,391 | 36,717 | 44,603 | 61,170 | 62,601 | 70,556 |
| By education level - Wind sector - Bachelors degree (jobs) | | 19,390 | 26,035 | 31,834 | 44,431 | 46,964 | 53,650 |
| By education level - Wind sector - Masters or professional degree (jobs) | | 5,403 | 6,941 | 8,328 | 11,803 | 13,085 | 15,017 |
| By education level - Wind sector - Doctoral degree (jobs) | | 1,098 | 1,340 | 1,567 | 2,246 | 2,601 | 2,984 |
| Related work experience - All sectors - None (jobs) | | 330,521 | 315,981 | 328,724 | 336,717 | 337,033 | 367,187 |
| Related work experience - All sectors - Up to 1 year (jobs) | | 453,065 | 430,922 | 446,844 | 456,216 | 454,502 | 498,089 |

Table 83: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| Related work experience - All sectors - 1 to 4 years (jobs) | | 857,825 | 814,137 | 838,127 | 852,079 | 847,943 | 914,892 |
| Related work experience - All sectors - 4 to 10 years (jobs) | | 542,618 | 516,803 | 534,165 | 545,072 | 543,420 | 587,187 |
| Related work experience - All sectors - Over 10 years (jobs) | | 147,625 | 140,508 | 144,356 | 146,105 | 144,509 | 154,704 |
| Related work experience - Biomass sector - None (jobs) | | 13,981 | 13,454 | 12,993 | 12,440 | 12,256 | 12,113 |
| Related work experience - Biomass sector - Up to 1 year (jobs) | | 27,594 | 26,850 | 26,215 | 25,390 | 25,189 | 25,054 |
| Related work experience - Biomass sector - 1 to 4 years (jobs) | | 24,570 | 23,497 | 22,459 | 21,305 | 20,969 | 20,627 |
| Related work experience - Biomass sector - 4 to 10 years (jobs) | | 12,773 | 12,232 | 11,633 | 11,065 | 10,904 | 10,683 |
| Related work experience - Biomass sector - Over 10 years (jobs) | | 3,517 | 3,394 | 3,249 | 3,117 | 3,085 | 3,032 |
| Related work experience - CO2 sector - None (jobs) | | | 0.136 | 0.173 | 0.186 | 0.205 | 0.218 |
| Related work experience - CO2 sector - Up to 1 year (jobs) | | | 0.177 | 0.225 | 0.242 | 0.268 | 0.285 |
| Related work experience - CO2 sector - 1 to 4 years (jobs) | | | 0.391 | 0.497 | 0.535 | 0.591 | 0.629 |
| Related work experience - CO2 sector - 4 to 10 years (jobs) | | | 0.248 | 0.315 | 0.339 | 0.375 | 0.4 |
| Related work experience - CO2 sector - Over 10 years (jobs) | | | 0.076 | 0.097 | 0.105 | 0.116 | 0.123 |
| Related work experience - Coal sector - None (jobs) | | 15,674 | 9,651 | 6,784 | 5,718 | 5,147 | 4,519 |
| Related work experience - Coal sector - Up to 1 year (jobs) | | 25,283 | 15,455 | 10,897 | 9,125 | 8,050 | 6,923 |
| Related work experience - Coal sector - 1 to 4 years (jobs) | | 44,669 | 27,422 | 19,283 | 16,215 | 14,491 | 12,628 |
| Related work experience - Coal sector - 4 to 10 years (jobs) | | 25,249 | 15,610 | 10,989 | 9,304 | 8,436 | 7,458 |
| Related work experience - Coal sector - Over 10 years (jobs) | | 6,389 | 3,965 | 2,805 | 2,382 | 2,162 | 1,914 |
| Related work experience - Grid sector - None (jobs) | | 68,021 | 69,016 | 83,291 | 92,690 | 97,801 | 110,983 |
| Related work experience - Grid sector - Up to 1 year (jobs) | | 87,687 | 89,173 | 107,871 | 120,335 | 127,287 | 144,811 |
| Related work experience - Grid sector - 1 to 4 years (jobs) | | 165,602 | 167,766 | 202,165 | 224,658 | 236,719 | 268,266 |
| Related work experience - Grid sector - 4 to 10 years (jobs) | | 108,525 | 109,863 | 132,291 | 146,901 | 154,671 | 175,152 |
| Related work experience - Grid sector - Over 10 years (jobs) | | 28,130 | 28,492 | 34,328 | 38,141 | 40,182 | 45,529 |
| Related work experience - Natural gas sector - None (jobs) | | 82,567 | 81,821 | 82,254 | 80,821 | 80,174 | 74,939 |
| Related work experience - Natural gas sector - Up to 1 year (jobs) | | 99,217 | 97,937 | 97,761 | 95,087 | 93,846 | 87,481 |
| Related work experience - Natural gas sector - 1 to 4 years (jobs) | | 210,446 | 207,459 | 207,046 | 201,646 | 198,838 | 185,049 |
| Related work experience - Natural gas sector - 4 to 10 years (jobs) | | 140,009 | 138,076 | 138,085 | 135,005 | 133,351 | 124,173 |
| Related work experience - Natural gas sector - Over 10 years (jobs) | | 38,021 | 37,332 | 37,008 | 35,713 | 35,028 | 32,487 |
| Related work experience - Nuclear sector - None (jobs) | | 6,177 | 5,830 | 5,204 | 4,438 | 3,798 | 3,124 |
| Related work experience - Nuclear sector - Up to 1 year (jobs) | | 9,018 | 8,508 | 7,591 | 6,471 | 5,536 | 4,551 |

Table 83: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Related work experience - Nuclear sector - 1 to 4 years (jobs) | | 18,292 | 17,240 | 15,368 | 13,088 | 11,186 | 9,188 |
| Related work experience - Nuclear sector - 4 to 10 years (jobs) | | 11,867 | 11,182 | 9,965 | 8,485 | 7,251 | 5,955 |
| Related work experience - Nuclear sector - Over 10 years (jobs) | | 3,653 | 3,445 | 3,072 | 2,617 | 2,238 | 1,839 |
| Related work experience - Oil sector - None (jobs) | | 107,206 | 96,690 | 88,143 | 80,619 | 74,855 | 65,744 |
| Related work experience - Oil sector - Up to 1 year (jobs) | | 148,335 | 133,305 | 121,106 | 110,446 | 102,284 | 89,701 |
| Related work experience - Oil sector - 1 to 4 years (jobs) | | 303,081 | 272,244 | 246,965 | 224,455 | 206,940 | 180,054 |
| Related work experience - Oil sector - 4 to 10 years (jobs) | | 183,894 | 164,890 | 149,308 | 135,444 | 124,649 | 108,255 |
| Related work experience - Oil sector - Over 10 years (jobs) | | 52,877 | 47,319 | 42,767 | 38,712 | 35,557 | 30,796 |
| Related work experience - Solar PV sector - None (jobs) | | 25,088 | 23,738 | 30,923 | 33,772 | 36,178 | 65,564 |
| Related work experience - Solar PV sector - Up to 1 year (jobs) | | 38,594 | 36,227 | 46,846 | 50,601 | 53,631 | 96,325 |
| Related work experience - Solar PV sector - 1 to 4 years (jobs) | | 60,117 | 57,004 | 74,432 | 81,316 | 87,156 | 158,132 |
| Related work experience - Solar PV sector - 4 to 10 years (jobs) | | 39,241 | 37,056 | 48,179 | 52,437 | 55,977 | 101,137 |
| Related work experience - Solar PV sector - Over 10 years (jobs) | | 9,777 | 9,255 | 12,100 | 13,075 | 13,896 | 25,143 |
| Related work experience - Wind sector - None (jobs) | | 11,808 | 15,780 | 19,134 | 26,217 | 26,824 | 30,201 |
| Related work experience - Wind sector - Up to 1 year (jobs) | | 17,337 | 23,468 | 28,557 | 38,761 | 38,679 | 43,243 |
| Related work experience - Wind sector - 1 to 4 years (jobs) | | 31,047 | 41,505 | 50,408 | 69,398 | 71,642 | 80,948 |
| Related work experience - Wind sector - 4 to 10 years (jobs) | | 21,061 | 27,894 | 33,715 | 46,431 | 48,180 | 54,375 |
| Related work experience - Wind sector - Over 10 years (jobs) | | 5,261 | 7,306 | 9,028 | 12,348 | 12,361 | 13,964 |
| On-the-Job Training - All sectors - None (jobs) | | 130,233 | 122,606 | 125,019 | 126,243 | 125,015 | 136,087 |
| On-the-Job Training - All sectors - Up to 1 year (jobs) | | 1,568,598 | 1,488,704 | 1,530,762 | 1,553,547 | 1,542,308 | 1,663,970 |
| On-the-Job Training - All sectors - 1 to 4 years (jobs) | | 470,637 | 450,564 | 470,585 | 483,598 | 484,654 | 527,942 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 140,505 | 135,696 | 144,330 | 150,949 | 153,844 | 170,560 |
| On-the-Job Training - All sectors - Over 10 years (jobs) | | 21,682 | 20,781 | 21,522 | 21,852 | 21,587 | 23,501 |
| On-the-Job Training - Biomass sector - None (jobs) | | 5,115 | 4,898 | 4,671 | 4,461 | 4,387 | 4,302 |
| On-the-Job Training - Biomass sector - Up to 1 year (jobs) | | 65,569 | 63,189 | 60,975 | 58,425 | 57,706 | 57,044 |
| On-the-Job Training - Biomass sector - 1 to 4 years (jobs) | | 9,082 | 8,752 | 8,404 | 8,030 | 7,931 | 7,814 |
| On-the-Job Training - Biomass sector - 4 to 10 years (jobs) | | 2,078 | 2,011 | 1,934 | 1,853 | 1,834 | 1,809 |
| On-the-Job Training - Biomass sector - Over 10 years (jobs) | | 590 | 578 | 562 | 548 | 545 | 540 |
| On-the-Job Training - CO2 sector - None (jobs) | | | 0.062 | 0.078 | 0.084 | 0.093 | 0.1 |
| On-the-Job Training - CO2 sector - Up to 1 year (jobs) | | | 0.709 | 0.902 | 0.97 | 1.07 | 1.14 |

Table 83: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|---------|---------|---------|---------|
| On-the-Job Training - CO2 sector - 1 to 4 years (jobs) | | | 0.199 | 0.253 | 0.273 | 0.301 | 0.321 |
| On-the-Job Training - CO2 sector - 4 to 10 years (jobs) | | | 0.048 | 0.061 | 0.066 | 0.073 | 0.078 |
| On-the-Job Training - CO2 sector - Over 10 years (jobs) | | | 0.01 | 0.012 | 0.013 | 0.015 | 0.016 |
| On-the-Job Training - Coal sector - None (jobs) | | 5,855 | 3,604 | 2,545 | 2,156 | 1,940 | 1,701 |
| On-the-Job Training - Coal sector - Up to 1 year (jobs) | | 82,094 | 50,386 | 35,517 | 29,893 | 26,663 | 23,181 |
| On-the-Job Training - Coal sector - 1 to 4 years (jobs) | | 22,287 | 13,762 | 9,662 | 8,139 | 7,352 | 6,483 |
| On-the-Job Training - Coal sector - 4 to 10 years (jobs) | | 6,269 | 3,873 | 2,694 | 2,263 | 2,063 | 1,837 |
| On-the-Job Training - Coal sector - Over 10 years (jobs) | | 759 | 476 | 340 | 292 | 268 | 239 |
| On-the-Job Training - Grid sector - None (jobs) | | 22,413 | 22,692 | 27,330 | 30,356 | 31,972 | 36,219 |
| On-the-Job Training - Grid sector - Up to 1 year (jobs) | | 294,044 | 298,002 | 359,250 | 399,387 | 421,010 | 477,330 |
| On-the-Job Training - Grid sector - 1 to 4 years (jobs) | | 102,875 | 104,381 | 125,972 | 140,191 | 147,925 | 167,866 |
| On-the-Job Training - Grid sector - 4 to 10 years (jobs) | | 34,963 | 35,507 | 42,890 | 47,773 | 50,452 | 57,302 |
| On-the-Job Training - Grid sector - Over 10 years (jobs) | | 3,670 | 3,728 | 4,504 | 5,018 | 5,302 | 6,024 |
| On-the-Job Training - Natural gas sector - None (jobs) | | 29,757 | 28,985 | 28,529 | 27,393 | 26,723 | 24,643 |
| On-the-Job Training - Natural gas sector - Up to 1 year (jobs) | | 368,095 | 362,428 | 360,924 | 350,441 | 344,973 | 320,729 |
| On-the-Job Training - Natural gas sector - 1 to 4 years (jobs) | | 126,385 | 125,235 | 125,961 | 123,905 | 122,978 | 114,961 |
| On-the-Job Training - Natural gas sector - 4 to 10 years (jobs) | | 40,605 | 40,624 | 41,408 | 41,379 | 41,485 | 39,059 |
| On-the-Job Training - Natural gas sector - Over 10 years (jobs) | | 5,419 | 5,354 | 5,332 | 5,154 | 5,079 | 4,737 |
| On-the-Job Training - Nuclear sector - None (jobs) | | 3,292 | 3,102 | 2,765 | 2,354 | 2,012 | 1,653 |
| On-the-Job Training - Nuclear sector - Up to 1 year (jobs) | | 33,429 | 31,506 | 28,083 | 23,916 | 20,441 | 16,789 |
| On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) | | 9,488 | 8,955 | 7,993 | 6,817 | 5,834 | 4,798 |
| On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) | | 2,288 | 2,160 | 1,928 | 1,645 | 1,408 | 1,158 |
| On-the-Job Training - Nuclear sector - Over 10 years (jobs) | | 510 | 482 | 430 | 367 | 315 | 259 |
| On-the-Job Training - Oil sector - None (jobs) | | 48,401 | 42,836 | 38,296 | 34,340 | 31,258 | 26,919 |
| On-the-Job Training - Oil sector - Up to 1 year (jobs) | | 560,028 | 502,962 | 456,281 | 414,875 | 382,737 | 333,419 |
| On-the-Job Training - Oil sector - 1 to 4 years (jobs) | | 144,954 | 130,489 | 118,668 | 108,164 | 100,062 | 87,426 |
| On-the-Job Training - Oil sector - 4 to 10 years (jobs) | | 34,246 | 31,166 | 28,675 | 26,483 | 24,839 | 22,064 |
| On-the-Job Training - Oil sector - Over 10 years (jobs) | | 7,764 | 6,995 | 6,369 | 5,814 | 5,389 | 4,722 |
| On-the-Job Training - Solar PV sector - None (jobs) | | 10,380 | 9,858 | 12,877 | 14,144 | 15,224 | 27,670 |
| On-the-Job Training - Solar PV sector - Up to 1 year (jobs) | | 109,793 | 104,245 | 136,462 | 148,700 | 159,151 | 289,014 |

Table 83: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) | | 37,128 | 34,808 | 44,906 | 48,632 | 51,627 | 92,669 |
| On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) | | 13,463 | 12,465 | 15,799 | 17,142 | 18,148 | 32,188 |
| On-the-Job Training - Solar PV sector - Over 10 years (jobs) | | 2,052 | 1,903 | 2,436 | 2,583 | 2,689 | 4,762 |
| On-the-Job Training - Wind sector - None (jobs) | | 5,021 | 6,631 | 8,006 | 11,039 | 11,498 | 12,981 |
| On-the-Job Training - Wind sector - Up to 1 year (jobs) | | 55,547 | 75,984 | 93,268 | 127,909 | 129,627 | 146,463 |
| On-the-Job Training - Wind sector - 1 to 4 years (jobs) | | 18,438 | 24,181 | 29,017 | 39,720 | 40,946 | 45,924 |
| On-the-Job Training - Wind sector - 4 to 10 years (jobs) | | 6,591 | 7,891 | 9,002 | 12,410 | 13,615 | 15,145 |
| On-the-Job Training - Wind sector - Over 10 years (jobs) | | 916 | 1,265 | 1,549 | 2,076 | 2,001 | 2,218 |
| On-Site or In-Plant Training - All sectors - None (jobs) | | 372,104 | 353,385 | 364,232 | 370,873 | 368,686 | 401,469 |
| On-Site or In-Plant Training - All sectors - Up to 1 year (jobs) | | 1,422,833 | 1,350,271 | 1,389,206 | 1,410,404 | 1,400,944 | 1,511,925 |
| On-Site or In-Plant Training - All sectors - 1 to 4 years (jobs) | | 368,612 | 352,606 | 367,702 | 377,223 | 377,598 | 410,916 |
| On-Site or In-Plant Training - All sectors - 4 to 10 years (jobs) | | 150,124 | 144,546 | 152,333 | 158,062 | 160,236 | 175,795 |
| On-Site or In-Plant Training - All sectors - Over 10 years (jobs) | | 17,981 | 17,542 | 18,743 | 19,629 | 19,944 | 21,956 |
| On-Site or In-Plant Training - Biomass sector - None (jobs) | | 13,295 | 12,752 | 12,228 | 11,645 | 11,488 | 11,329 |
| On-Site or In-Plant Training - Biomass sector - Up to 1 year (jobs) | | 57,665 | 55,606 | 53,672 | 51,476 | 50,846 | 50,255 |
| On-Site or In-Plant Training - Biomass sector - 1 to 4 years (jobs) | | 8,314 | 8,010 | 7,705 | 7,367 | 7,270 | 7,168 |
| On-Site or In-Plant Training - Biomass sector - 4 to 10 years (jobs) | | 2,584 | 2,495 | 2,393 | 2,293 | 2,266 | 2,228 |
| On-Site or In-Plant Training - Biomass sector - Over 10 years (jobs) | | 576 | 564 | 550 | 536 | 533 | 529 |
| On-Site or In-Plant Training - CO2 sector - None (jobs) | | | 0.171 | 0.217 | 0.234 | 0.259 | 0.276 |
| On-Site or In-Plant Training - CO2 sector - Up to 1 year (jobs) | | | 0.639 | 0.813 | 0.875 | 0.966 | 1.03 |
| On-Site or In-Plant Training - CO2 sector - 1 to 4 years (jobs) | | | 0.154 | 0.196 | 0.211 | 0.233 | 0.249 |
| On-Site or In-Plant Training - CO2 sector - 4 to 10 years (jobs) | | | 0.057 | 0.073 | 0.078 | 0.086 | 0.092 |
| On-Site or In-Plant Training - CO2 sector - Over 10 years (jobs) | | | 0.006 | 0.008 | 0.009 | 0.009 | 0.01 |
| On-Site or In-Plant Training - Coal sector - None (jobs) | | 16,850 | 10,437 | 7,376 | 6,265 | 5,686 | 5,029 |
| On-Site or In-Plant Training - Coal sector - Up to 1 year (jobs) | | 75,351 | 46,205 | 32,545 | 27,355 | 24,357 | 21,143 |
| On-Site or In-Plant Training - Coal sector - 1 to 4 years (jobs) | | 17,859 | 11,003 | 7,730 | 6,504 | 5,849 | 5,134 |
| On-Site or In-Plant Training - Coal sector - 4 to 10 years (jobs) | | 6,442 | 3,981 | 2,774 | 2,336 | 2,131 | 1,898 |
| On-Site or In-Plant Training - Coal sector - Over 10 years (jobs) | | 761 | 475 | 333 | 283 | 262 | 236 |
| On-Site or In-Plant Training - Grid sector - None (jobs) | | 69,740 | 70,548 | 84,892 | 94,206 | 99,129 | 112,190 |
| On-Site or In-Plant Training - Grid sector - Up to 1 year (jobs) | | 269,883 | 273,639 | 330,026 | 367,058 | 387,096 | 439,064 |

Table 83: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|---------|---------|---------|---------|---------|---------|
| On-Site or In-Plant Training - Grid sector - 1 to 4 years (jobs) | | 79,099 | 80,297 | 96,955 | 107,953 | 113,965 | 129,394 |
| On-Site or In-Plant Training - Grid sector - 4 to 10 years (jobs) | | 34,740 | 35,258 | 42,562 | 47,378 | 50,004 | 56,759 |
| On-Site or In-Plant Training - Grid sector - Over 10 years (jobs) | | 4,503 | 4,568 | 5,511 | 6,130 | 6,466 | 7,335 |
| On-Site or In-Plant Training - Natural gas sector - None (jobs) | | 90,790 | 89,018 | 88,485 | 86,038 | 84,592 | 78,439 |
| On-Site or In-Plant Training - Natural gas sector - Up to 1 year (jobs) | | 335,648 | 330,639 | 329,404 | 319,930 | 315,066 | 293,042 |
| On-Site or In-Plant Training - Natural gas sector - 1 to 4 years (jobs) | | 96,099 | 95,281 | 95,809 | 94,122 | 93,397 | 87,337 |
| On-Site or In-Plant Training - Natural gas sector - 4 to 10 years (jobs) | | 42,664 | 42,609 | 43,259 | 42,963 | 42,940 | 40,366 |
| On-Site or In-Plant Training - Natural gas sector - Over 10 years (jobs) | | 5,060 | 5,079 | 5,198 | 5,218 | 5,244 | 4,946 |
| On-Site or In-Plant Training - Nuclear sector - None (jobs) | | 8,772 | 8,262 | 7,360 | 6,264 | 5,351 | 4,393 |
| On-Site or In-Plant Training - Nuclear sector - Up to 1 year (jobs) | | 30,140 | 28,415 | 25,335 | 21,582 | 18,451 | 15,158 |
| On-Site or In-Plant Training - Nuclear sector - 1 to 4 years (jobs) | | 7,232 | 6,826 | 6,094 | 5,198 | 4,449 | 3,659 |
| On-Site or In-Plant Training - Nuclear sector - 4 to 10 years (jobs) | | 2,617 | 2,470 | 2,204 | 1,880 | 1,609 | 1,323 |
| On-Site or In-Plant Training - Nuclear sector - Over 10 years (jobs) | | 245 | 231 | 206 | 176 | 150 | 123 |
| On-Site or In-Plant Training - Oil sector - None (jobs) | | 128,070 | 114,160 | 102,780 | 92,748 | 84,932 | 73,475 |
| On-Site or In-Plant Training - Oil sector - Up to 1 year (jobs) | | 504,220 | 452,845 | 410,849 | 373,639 | 344,793 | 300,510 |
| On-Site or In-Plant Training - Oil sector - 1 to 4 years (jobs) | | 117,197 | 105,658 | 96,224 | 87,832 | 81,356 | 71,167 |
| On-Site or In-Plant Training - Oil sector - 4 to 10 years (jobs) | | 41,330 | 37,551 | 34,480 | 31,757 | 29,692 | 26,252 |
| On-Site or In-Plant Training - Oil sector - Over 10 years (jobs) | | 4,577 | 4,235 | 3,956 | 3,702 | 3,512 | 3,145 |
| On-Site or In-Plant Training - Solar PV sector - None (jobs) | | 29,444 | 27,905 | 36,422 | 39,744 | 42,551 | 77,136 |
| On-Site or In-Plant Training - Solar PV sector - Up to 1 year (jobs) | | 99,930 | 94,761 | 123,869 | 134,911 | 144,294 | 261,760 |
| On-Site or In-Plant Training - Solar PV sector - 1 to 4 years (jobs) | | 28,805 | 27,027 | 34,906 | 37,800 | 40,136 | 72,101 |
| On-Site or In-Plant Training - Solar PV sector - 4 to 10 years (jobs) | | 13,142 | 12,185 | 15,476 | 16,785 | 17,773 | 31,562 |
| On-Site or In-Plant Training - Solar PV sector - Over 10 years (jobs) | | 1,495 | 1,402 | 1,808 | 1,961 | 2,085 | 3,743 |
| On-Site or In-Plant Training - Wind sector - None (jobs) | | 15,143 | 20,303 | 24,688 | 33,961 | 34,957 | 39,478 |
| On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) | | 49,996 | 68,161 | 83,506 | 114,453 | 116,041 | 130,992 |
| On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | | 14,006 | 18,503 | 22,279 | 30,448 | 31,175 | 34,955 |
| On-Site or In-Plant Training - Wind sector - 4 to 10 years (jobs) | | 6,606 | 7,996 | 9,186 | 12,669 | 13,822 | 15,407 |
| On-Site or In-Plant Training - Wind sector - Over 10 years (jobs) | | 763 | 990 | 1,182 | 1,622 | 1,691 | 1,899 |
| Wage income - Biomass (million \$2019) | | 4,270 | 4,184 | 4,096 | 3,994 | 4,034 | 4,069 |
| Wage income - CO2 (million \$2019) | | | 0.075 | 0.097 | 0.107 | 0.121 | 0.132 |
| Wage income - Coal (million \$2019) | | 6,924 | 4,321 | 3,077 | 2,630 | 2,405 | 2,146 |
| Wage income - Grid (million \$2019) | | 28,641 | 29,425 | 35,975 | 40,576 | 43,412 | 49,973 |
| Wage income - Natural Gas (million \$2019) | | 37,783 | 37,773 | 38,180 | 37,614 | 37,575 | 35,454 |

Table 83: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|--------|
| Wage income - Nuclear (million \$2019) | | 3,503 | 3,382 | 3,089 | 2,697 | 2,365 | 1,994 |
| Wage income - Oil (million \$2019) | | 52,354 | 47,625 | 43,737 | 40,221 | 37,516 | 33,003 |
| Wage income - Solar (million \$2019) | | 9,792 | 9,387 | 12,396 | 13,730 | 14,926 | 27,469 |
| Wage income - Wind (million \$2019) | | 5,343 | 7,146 | 8,746 | 12,248 | 12,993 | 14,921 |

Table 84: REF scenario - IMPACTS - Fossil fuel industries

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|--------|--------|--------|--------|--------|-----------|
| Oil consumption - Annual (million bbls) | | 6,043 | 5,699 | 5,491 | 5,512 | 5,642 | 5,820 |
| Oil consumption - Cumulative (million bbls) | | | | | | | 178,024 |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 5,074 | 4,957 | 4,365 |
| Oil production - Cumulative (million bbls) | | | | | | | 155,778 |
| Natural gas consumption - Annual (tcf) | | 23,809 | 26,243 | 27,450 | 25,560 | 25,988 | 25,610 |
| Natural gas consumption - Cumulative (tcf) | | | | | | | 792,006 |
| Natural gas production - Annual (tcf) | | 36,910 | 41,028 | 42,444 | 40,854 | 41,386 | 41,138 |
| Natural gas production - Cumulative (tcf) | | | | | | | 1,236,087 |

Table 85: REF scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Final energy use - Transportation (PJ) | 28,007 | 26,732 | 24,918 | 23,878 | 24,004 | 24,746 | 25,679 |
| Final energy use - Residential (PJ) | 11,787 | 11,149 | 10,849 | 10,682 | 10,653 | 10,714 | 10,787 |
| Final energy use - Commercial (PJ) | 9,013 | 9,089 | 9,161 | 9,159 | 9,215 | 9,479 | 9,955 |
| Final energy use - Industry (PJ) | 25,111 | 26,559 | 27,315 | 27,857 | 28,763 | 29,709 | 30,835 |

Table 86: REF scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Electricity distribution capital invested - Cumulative 5-yr (billion \$2018) | | 174 | 178 | 262 | 276 | 263 | 274 |

Table 87: REF scenario - PILLAR 1: Efficiency/Electrification - Transportation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|-------|-------|-------|-------|-------|-------|
| Vehicle sales - Light-duty - EV (%) | 4.05 | 6.24 | 7.05 | 8.71 | 10.6 | 12.1 | 13.3 |
| Vehicle sales - Light-duty - gasoline (%) | 89.4 | 85.7 | 83.4 | 81.3 | 79.2 | 77.3 | 75.7 |
| Vehicle sales - Light-duty - hybrid (%) | 4.93 | 5.75 | 7 | 7.55 | 8.08 | 8.59 | 8.95 |
| Vehicle sales - Light-duty - diesel (%) | 1.4 | 1.84 | 2.16 | 2.01 | 1.81 | 1.68 | 1.6 |
| Vehicle sales - Light-duty - hydrogen FC (%) | 0.11 | 0.371 | 0.337 | 0.298 | 0.293 | 0.293 | 0.303 |
| Vehicle sales - Light-duty - other (%) | 0.095 | 0.099 | 0.095 | 0.096 | 0.095 | 0.094 | 0.096 |
| Vehicle sales - Medium-duty - EV (%) | 0.027 | 0.105 | 0.329 | 0.671 | 0.895 | 0.973 | 0.993 |
| Vehicle sales - Medium-duty - gasoline (%) | 34 | 35.5 | 37 | 38.5 | 39.7 | 40.8 | 41.7 |
| Vehicle sales - Medium-duty - hybrid (%) | 0.365 | 0.427 | 0.496 | 0.577 | 0.674 | 0.793 | 0.929 |
| Vehicle sales - Medium-duty - diesel (%) | 65.2 | 63.5 | 61.6 | 59.6 | 58 | 56.5 | 55.2 |
| Vehicle sales - Medium-duty - hydrogen FC (%) | 0.175 | 0.208 | 0.242 | 0.285 | 0.339 | 0.409 | 0.487 |
| Vehicle sales - Medium-duty - other (%) | 0.255 | 0.271 | 0.298 | 0.345 | 0.42 | 0.528 | 0.671 |
| Vehicle sales - Heavy-duty - diesel (%) | 98.1 | 98.2 | 97.9 | 97 | 95.6 | 93.5 | 91.6 |
| Vehicle sales - Heavy-duty - EV (%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vehicle sales - Heavy-duty - gasoline (%) | 0.229 | 0.242 | 0.257 | 0.274 | 0.294 | 0.317 | 0.343 |
| Vehicle sales - Heavy-duty - hybrid (%) | 0.083 | 0.096 | 0.112 | 0.13 | 0.15 | 0.174 | 0.202 |
| Vehicle sales - Heavy-duty - hydrogen FC (%) | 0.119 | 0.138 | 0.16 | 0.186 | 0.216 | 0.25 | 0.29 |
| Vehicle sales - Heavy-duty - other (%) | 1.51 | 1.31 | 1.57 | 2.37 | 3.69 | 5.71 | 7.57 |

Table 88: REF scenario - PILLAR 1: Efficiency/Electrification - Residential

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Sales of space heating units - Electric Heat Pump (%) | 13 | 31.3 | 32.2 | 33.6 | 35.1 | 36.7 | 38.4 |
| Sales of space heating units - Electric Resistance (%) | 20.8 | 20.7 | 20.5 | 20.1 | 19.6 | 18.5 | 16.6 |
| Sales of space heating units - Gas (%) | 56.2 | 36.1 | 38.6 | 39.6 | 39 | 38.5 | 38.6 |
| Sales of space heating units - Fossil (%) | 10.1 | 11.9 | 8.72 | 6.7 | 6.35 | 6.23 | 6.31 |
| Sales of water heating units - Electric Heat Pump (%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sales of water heating units - Electric Resistance (%) | 38.4 | 51.9 | 52 | 52.3 | 52.2 | 52.3 | 52.3 |
| Sales of water heating units - Gas Furnace (%) | 58 | 45.4 | 45.4 | 45.1 | 45.2 | 45.1 | 45.1 |
| Sales of water heating units - Other (%) | 3.58 | 2.66 | 2.63 | 2.62 | 2.62 | 2.6 | 2.59 |
| Sales of cooking units - Electric Resistance (%) | 60.9 | 60.9 | 60.9 | 60.9 | 60.9 | 60.9 | 60.9 |
| Sales of cooking units - Gas (%) | 39.1 | 39.1 | 39.1 | 39.1 | 39.1 | 39.1 | 39.1 |
| Residential HVAC investment in 2020s vs. REF - Cumulative 5-yr (billion \$2018) | | 244 | 252 | | | | |

Table 89: REF scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-----------|-----------|-------|-------|-------|-------|
| Sales of space heating units - Electric Heat Pump (%) | 2.95 | 20.2 | 53 | 69 | 71.2 | 71.5 | 71.4 |
| Sales of space heating units - Electric Resistance (%) | 7.91 | 9.57 | 15.3 | 22 | 26.9 | 27.7 | 27.7 |
| Sales of space heating units - Gas (%) | 85.2 | 66.6 | 29.1 | 7.95 | 1.72 | 0.875 | 0.814 |
| Sales of space heating units - Fossil (%) | 3.94 | 3.64 | 2.67 | 1.11 | 0.16 | 0.012 | 0 |
| Sales of water heating units - Electric Heat Pump (%) | 0.385 | 0.401 | 0.397 | 0.398 | 0.398 | 0.397 | 0.397 |
| Sales of water heating units - Electric Resistance (%) | 3.8 | 3.86 | 3.84 | 3.85 | 3.86 | 3.85 | 3.86 |
| Sales of water heating units - Gas (%) | 94.1 | 94.1 | 94 | 94 | 94 | 94 | 94 |
| Sales of water heating units - Other (%) | 1.66 | 1.69 | 1.73 | 1.71 | 1.73 | 1.74 | 1.73 |
| Sales of cooking units - Electric Resistance (%) | 32.5 | 34.7 | 34.8 | 34.8 | 34.8 | 34.9 | 34.9 |
| Sales of cooking units - Gas (%) | 67.5 | 65.3 | 65.2 | 65.2 | 65.2 | 65.1 | 65.1 |
| Commercial HVAC investment in 2020s - Cumulative 5-yr (million \$2018) | | 1,033,244 | 1,071,458 | | | | |

Table 90: REF scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|---------|---------|---------|---------|---------|---------|---------|
| Installed - Onshore wind (MW) | 97,749 | 99,521 | 121,386 | 144,651 | 220,515 | 277,590 | 307,422 |
| Installed - Offshore wind (MW) | 29.3 | 997 | 2,991 | 5,028 | 7,082 | 9,651 | 38,635 |
| Installed - Rooftop PV (MW) | 33,317 | 52,523 | 69,448 | 90,809 | 117,114 | 148,351 | 185,890 |
| Installed - Utility-scale PV (MW) | 18,371 | 20,175 | 28,189 | 51,008 | 69,172 | 75,363 | 101,359 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Geothermal (MW) | 2,394 | 2,396 | 2,400 | 2,405 | 2,409 | 2,415 | 2,421 |
| Installed - Nuclear (MW) | 98,458 | 95,132 | 90,001 | 76,069 | 68,465 | 56,021 | 48,338 |
| Installed - Ccgt & gas steam (MW) | 335,091 | 336,429 | 372,171 | 418,875 | 420,609 | 411,216 | 402,211 |
| Installed - Ccgt w cc (MW) | 0 | 0 | 75.1 | 123 | 155 | 183 | 198 |
| Installed - Ct (MW) | 147,318 | 141,836 | 138,659 | 133,493 | 148,035 | 248,004 | 303,871 |
| Installed - Biomass (MW) | 10,004 | 9,138 | 7,833 | 6,120 | 4,703 | 3,396 | 2,509 |
| Installed - Biomass w cc (MW) | 0 | 0 | 28.2 | 35.9 | 41.9 | 48.4 | 53.9 |
| Installed - Coal (MW) | 215,803 | 136,252 | 87,021 | 67,927 | 65,539 | 63,529 | 58,003 |
| Installed - Other (MW) | 67,926 | 57,451 | 55,131 | 53,826 | 51,918 | 50,896 | 49,542 |
| Installed - Grid battery storage (MW) | | 1,001 | 1,423 | 2,713 | 3,240 | 4,835 | 5,590 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |

Table 91: REF scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|
| Onshore wind (TWh) | 411 | 413 | 510 | 613 | 942 | 1,177 | 1,300 |
| Offshore wind (TWh) | 0.096 | 3.67 | 11.1 | 23.4 | 28.7 | 38.7 | 173 |
| Rooftop PV (TWh) | 50.1 | 79.5 | 102 | 130 | 174 | 221 | 268 |
| Utility-scale PV (TWh) | 49.1 | 54.5 | 72.9 | 131 | 182 | 199 | 257 |
| Hydro (TWh) | 300 | 312 | 295 | 296 | 304 | 294 | 295 |
| Geothermal (TWh) | 14.6 | 14.5 | 14.6 | 14.6 | 14.2 | 14.2 | 13.9 |
| Nuclear (TWh) | 802 | 775 | 733 | 620 | 558 | 456 | 394 |
| Gas (TWh) | 1,547 | 1,791 | 2,184 | 2,446 | 2,263 | 2,338 | 2,245 |
| Gas w cc (TWh) | 0 | 0 | 0.252 | 0.351 | 0.376 | 0.416 | 0.441 |
| Biomass (TWh) | 16.8 | 20.1 | 14 | 8.93 | 3.82 | 4.42 | 5.62 |
| Biomass w cc (TWh) | 0 | 0 | 0.088 | 0.099 | 0.108 | 0.12 | 0.13 |
| Coal (TWh) | 965 | 844 | 534 | 394 | 366 | 342 | 310 |

Table 92: REF scenario - PILLAR 2: Clean Electricity - Transmission

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|-------|-------|-------|
| Total HV transmission (for wind and solar) - Base (percent of 2020) | 0 | 0.145 | 0.183 | 0.299 | 0.379 | 0.463 | 0.471 |

Table 93: REF scenario - PILLAR 3: Clean fuels - Bioenergy

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - Biopower (1000 tonnes) | 7,104 | 16,068 | 14,149 | 12,723 | 6,554 | 8,191 | 11,637 |
| Biomass input - Biopower w/ cc (1000 tonnes) | 0 | 0 | 53.2 | 59.8 | 65.2 | 72.5 | 78.2 |
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomass input - Bio-FT w/ CC (1000 tonnes) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomass input - Pyrolysis liquids (1000 tonnes) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomass input - Pyrolysis liquids w/ cc (1000 tonnes) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomass input - SNG (1000 tonnes) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomass input - Bio-SNG w/ CC (1000 tonnes) | 0 | 0 | 5.9 | 6.22 | 5.52 | 5.33 | 5.34 |
| Biomass input - Ethanol (1000 tonnes) | 129,536 | 129,536 | 129,529 | 129,529 | 129,536 | 129,536 | 129,536 |

Table 94: REF scenario - PILLAR 4: CCUS - CO2 storage

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------|------|------|------|------|------|------|------|
| Annual (MMT) | 0 | 0 | 0.18 | 0.23 | 0.25 | 0.28 | 0.29 |

Table 95: REF scenario - PILLAR 6: Land sinks - Forests - REF only

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|------|------|------|------|------|------|
| Business-as-usual carbon sink - Natural uptake (Mt CO2e/y) | -575 | | -367 | | | | -325 |
| Business-as-usual carbon sink - Retained in Hardwood Products (Mt CO2e/y) | -81.6 | | -139 | | | | -146 |
| Business-as-usual carbon sink - Total (Mt CO2e/y) | -657 | | -507 | | | | -472 |

Table 96: REF scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -24,500 |

Table 96: REF scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|----------------|
| Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) | | | | | | | -14,000 |
| Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) | | | | | | | -116,000 |
| Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) | | | | | | | -29,000 |
| Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -100,000 |
| Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -21,000 |
| Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) | | | | | | | -121,000 |
| Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) | | | | | | | -20,000 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - 505,500 |
| Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -36,700 |
| Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) | | | | | | | -49,000 |
| Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) | | | | | | | -209,000 |
| Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) | | | | | | | -42,500 |
| Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) | | | | | | | - 200,000 |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -40,500 |
| Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | | | | | | | -181,500 |
| Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) | | | | | | | -142,000 |
| Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) | | | | | | | -119,000 |
| Carbon sink potential - Mid - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - 1,020,200 |
| Carbon sink potential - High - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -48,900 |
| Carbon sink potential - High - Avoid deforestation (1000 tCO2e/y) | | | | | | | -84,000 |
| Carbon sink potential - High - Extend rotation length (1000 tCO2e/y) | | | | | | | -302,000 |
| Carbon sink potential - High - Improve plantations (1000 tCO2e/y) | | | | | | | -57,000 |
| Carbon sink potential - High - Increase retention of HWP (1000 tCO2e/y) | | | | | | | - 300,000 |
| Carbon sink potential - High - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - High - Reforest cropland (1000 tCO2e/y) | | | | | | | -242,000 |
| Carbon sink potential - High - Reforest pasture (1000 tCO2e/y) | | | | | | | - 264,000 |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | - 1,535,900 |
| Carbon sink potential - High - Restore productivity (1000 tCO2e/y) | | | | | | | -178,000 |
| Land impacted for carbon sink potential - Low - Accelerate regeneration (1000 hectares) | | | | | | | 4,000 |

Table 96: REF scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - Low - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 10,677 |
| Land impacted for carbon sink potential - Low - Extend rotation length (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 hectares) | | | | | | | 10,500 |
| Land impacted for carbon sink potential - Low - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Low - Increase trees outside forests (1000 hectares) | | | | | | | 3,000 |
| Land impacted for carbon sink potential - Low - Reforest cropland (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 1,300 |
| Land impacted for carbon sink potential - Low - Restore productivity (1000 hectares) | | | | | | | 35,700 |
| Land impacted for carbon sink potential - Low - Total impacted (over 30 years) (1000 hectares) | | | | | | | 132,177 |
| Land impacted for carbon sink potential - Mid - Accelerate regeneration (1000 hectares) | | | | | | | 6,000 |
| Land impacted for carbon sink potential - Mid - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,025 |
| Land impacted for carbon sink potential - Mid - Extend rotation length (1000 hectares) | | | | | | | 106,500 |
| Land impacted for carbon sink potential - Mid - Improve plantations (1000 hectares) | | | | | | | 15,800 |
| Land impacted for carbon sink potential - Mid - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Mid - Increase trees outside forests (1000 hectares) | | | | | | | 4,350 |
| Land impacted for carbon sink potential - Mid - Reforest cropland (1000 hectares) | | | | | | | 12,000 |
| Land impacted for carbon sink potential - Mid - Reforest pasture (1000 hectares) | | | | | | | 9,400 |
| Land impacted for carbon sink potential - Mid - Restore productivity (1000 hectares) | | | | | | | 71,900 |
| Land impacted for carbon sink potential - Mid - Total impacted (over 30 years) (1000 hectares) | | | | | | | 236,975 |
| Land impacted for carbon sink potential - High - Accelerate regeneration (1000 hectares) | | | | | | | 8,000 |
| Land impacted for carbon sink potential - High - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 11,373 |
| Land impacted for carbon sink potential - High - Extend rotation length (1000 hectares) | | | | | | | 154,000 |

Table 96: *REF scenario - PILLAR 6: Land sinks - Forests (continued)*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - High - Improve plantations (1000 hectares) | | | | | | | 21,000 |
| Land impacted for carbon sink potential - High - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - High - Increase trees outside forests (1000 hectares) | | | | | | | 5,700 |
| Land impacted for carbon sink potential - High - Reforest cropland (1000 hectares) | | | | | | | 16,000 |
| Land impacted for carbon sink potential - High - Reforest pasture (1000 hectares) | | | | | | | 7,500 |
| Land impacted for carbon sink potential - High - Restore productivity (1000 hectares) | | | | | | | 59,000 |
| Land impacted for carbon sink potential - High - Total impacted (over 30 years) (1000 hectares) | | | | | | | 282,573 |

Table 97: *REF scenario - PILLAR 6: Land sinks - Total assumed land sink*

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|------|-------|-------|
| Total assumed land sink (Gt CO ₂ e/y) | -0.7 | -0.73 | -0.75 | -0.78 | -0.8 | -0.83 | -0.85 |