

Net-Zero America - national state report

2021-03-18

These data underlie graphs and tables presented in the Princeton Net-Zero America study:

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Notes

- These data are all data from the study available at https://netzeroamerica.prince-ton.edu.
- The Net-Zero America study describes five pathways to reach net-zero emissions and one "no new policies" reference scenario. In this document, state-level results are grouped by scenario. For some scenarios, the study generated national, but not statelevel results.
- Within results for a given scenario, data tables are organized into corresponding sections of the full net-zero study (e.g., Pillar 1, Pillar 2, etc.)
- For Pillar 6 (Land sinks), values shown are maximum carbon storage potentials.

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

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

Table 2: E+ scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

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

Table 3: E+ scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| Final energy use - Residential (PJ) | 11,788 | 11,090 | 10,221 | 8,966 | 7,776 | 6,967 | 6,512 |
| Final energy use - Transportation (PJ) | 27,996 | 26,390 | 23,464 | 19,872 | 16,608 | 14,565 | 13,649 |

Table 4: E+ scenario - PILLAR 1: Efficiency/Electrification - Residential

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

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|--------|---------|---------|---------|---------|---------|
| Light-duty vehicle capital costs - | | 51,477 | 133,974 | 213,805 | 325,180 | 352,492 | 336,852 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Public EV charging plugs - DC Fast (1000 | 14.4 | | 93.9 | | 391 | | 628 |
| units) | | | | | | | |
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 2,256 | | 9,394 | | 15,098 |
| 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 |
| Vehicle sales - Light-duty - diesel (%) | 1.4 | 1.68 | 1.2 | 0.382 | 0.072 | 0.013 | 0 |
| 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 - 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 - diesel (%) | 64.7 | 59.7 | 42.3 | 14.4 | 2.59 | 0.384 | 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 - hydrogen | 0.196 | 1.27 | 6.33 | 15.2 | 19.1 | 19.9 | 20 |
| FC (%) | | | | | | | |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.255 | 0.205 | 0.083 | 0.019 | 0.004 | 0 |

Table 6: E+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---------|---------|---------|---------|---------|-----------|-----------|
| Capital invested - Biomass power plant | 0 | 0 | 0.005 | 0.001 | 0.003 | 0.001 | 0 |
| (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu allam | 0 | 0 | 0 | 0.349 | 0.094 | 0.108 | 0.381 |
| power plant (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu power | 0 | 0 | 19.4 | 0.015 | 30.1 | 20.7 | 2.42 |
| plant (billion \$2018) | | | | | | | |
| 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 - 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 - Coal (MW) | 215,907 | 48,614 | 171 | 170 | 150 | 122 | 43.4 |
| Installed - Ct (MW) | 146,567 | 135,736 | 127,617 | 148,354 | 213,247 | 242,832 | 242,414 |
| Installed - Geothermal (MW) | 2,390 | 2,393 | 2,409 | 2,411 | 2,414 | 2,422 | 2,440 |
| Installed - Grid battery storage (MW) | | 626 | 2,536 | 15,363 | 51,414 | 131,610 | 178,317 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Nuclear (MW) | 98,470 | 95,134 | 90,007 | 76,067 | 68,456 | 57,259 | 61,447 |
| Installed - Offshore wind (MW) | 29.3 | 1,034 | 4,949 | 16,240 | 40,241 | 103,788 | 223,624 |
| Installed - Onshore wind (MW) | 97,767 | 185,353 | 346,695 | 547,707 | 776,470 | 970,335 | 1,194,150 |
| Installed - Other (MW) | 68,045 | 57,078 | 55,303 | 54,113 | 52,213 | 51,122 | 48,463 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |
| 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 |

Table 7: E+ scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|-------|------|--------|-------|-------|-------|-------|
| Biomass (TWh) | 18.2 | 19.7 | 39.5 | 26.3 | 18.7 | 13.4 | 0.436 |
| Biomass power plant (GWh) | 3,540 | 820 | 10,266 | 6,546 | 3,884 | 1,366 | 57.9 |
| Biomass w cc (TWh) | 0 | 0 | 21.7 | 21.9 | 53.7 | 76.5 | 79.7 |
| Biomass w/ccu allam power plant (GWh) | 0 | 0 | 0 | 265 | 294 | 386 | 767 |

Table 7: E+ scenario - PILLAR 2: Clean Electricity - Generation (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------|-------|-------|--------|--------|--------|--------|--------|
| Biomass w/ccu power plant (GWh) | 0 | 0 | 21,701 | 21,661 | 53,456 | 76,143 | 78,946 |
| Coal (TWh) | 982 | 284 | 0.599 | 0.598 | 0.526 | 0.429 | 0.152 |
| 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 |
| Geothermal (TWh) | 14.5 | 14.5 | 14.3 | 14.2 | 13.8 | 13.7 | 13.1 |
| Hydro (TWh) | 300 | 312 | 295 | 295 | 302 | 292 | 292 |
| Nuclear (TWh) | 802 | 775 | 733 | 620 | 558 | 467 | 503 |
| Offshore wind (TWh) | 0.093 | 3.9 | 20.3 | 80.7 | 182 | 455 | 934 |
| Onshore wind (TWh) | 412 | 764 | 1,446 | 2,199 | 3,029 | 3,710 | 4,485 |
| 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 |

Table 8: E+ scenario - PILLAR 2: Clean Electricity - Transmission

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Total HV transmission (for wind and solar) - Base all (%) | 0 | 13.7 | 34 | 66.3 | 110 | 159 | 216 |
| Total HV transmission (for wind and solar) - Constrained all (%) | 0 | 16.2 | 43 | 81.5 | 130 | 179 | 247 |

Table 9: E+ scenario - PILLAR 3: Clean fuels - Bioenergy

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 73,607 | 137,071 | 279,102 | 426,955 |
| Biomass input - Bio-FT w/ CC (1000 tonnes) | 0 | 0 | 0 | 108 | 124 | 156 | 209 |
| Biomass input - Bio-SNG w/ CC (1000 tonnes) | 0 | 0 | 19.2 | 11.8 | 9.26 | 8.74 | 7.28 |
| 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 - Ethanol (1000 tonnes) | 129,506 | 129,506 | 129,536 | 125,006 | 67,634 | 10,261 | 905 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 90.5 | 101 | 104 | 79.1 |
| 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 |
| 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 - 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 - 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 10: E+ scenario - PILLAR 4: CCUS - CO2 pipelines

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|--------|---------|---------|---------|---------|
| All (km) | | 708 | 18,603 | 40,784 | 51,430 | 69,835 | 105,857 |
| Cumulative investment - All (million \$2018) | | 3,706 | 69,248 | 115,112 | 124,026 | 139,961 | 167,114 |

Table 10: E+ scenario - PILLAR 4: CCUS - CO2 pipelines (continued)

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

Table 11: E+ scenario - PILLAR 4: CCUS - CO2 storage

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|-------|--------|--------|--------|--------|
| CO2 storage (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 12: E+ scenario - PILLAR 6: Land sink Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Aggressive | 2020 | 2025 | 2030 | 2033 | 2040 | 2040 | -23,286 |
| deployment - Corn-ethanol to energy | | | | | | | -23,200 |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -203,503 |
| deployment - Cropland measures (1000 | | | | | | | -203,303 |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -7,391 |
| deployment - Permanent conservation | | | | | | | -1,371 |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -234,180 |
| deployment - Total (1000 tC02e/y) | | | | | | | -234,100 |
| Carbon sink potential - Moderate | | | | | | | -23,286 |
| deployment - Corn-ethanol to energy | | | | | | | -23,200 |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -106,430 |
| deployment - Cropland measures (1000 | | | | | | | -100,430 |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -3,696 |
| deployment - Permanent conservation | | | | | | | -3,070 |
| cover (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -133,412 |
| deployment - Total (1000 tC02e/y) | | | | | | | 100,412 |
| Land impacted for carbon sink - | | | | | | | 11,287 |
| Aggressive deployment - Corn-ethanol to | | | | | | | 11,201 |
| energy grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 136,405 |
| Aggressive deployment - Cropland | | | | | | | 100, 100 |
| measures (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 12,749 |
| Aggressive deployment - Permanent | | | | | | | 12,117 |
| conservation cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 160,442 |
| Aggressive deployment - Total (1000 | | | | | | | .00, |
| hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 11,287 |
| deployment - Corn-ethanol to energy | | | | | | | ,20 |
| grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 71,390 |
| deployment - Cropland measures (1000 | | | | | | | .,,,,, |
| hectares) | | | | | | | |

Table 12: E+ scenario - PILLAR 6: Land sinks - Agriculture (continued)

| | - | | | | | | |
|--|------|------|------|------|------|------|--------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| 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 |

Table 13: E+ scenario - PILLAR 6: Land sinks - Forests

| Item Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - High - Accelerate | | | | | | | -48,900 |
| regeneration (1000 tCO2e/y) | | | | | | | , |
| Carbon sink potential - High - All (not | | | | | | | - |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1,535,900 |
| Carbon sink potential - High - Avoid | | | | | | | -84,000 |
| deforestation (1000 tCO2e/y) | | | | | | | 0 ., |
| Carbon sink potential - High - Extend | | | | | | | -302,000 |
| rotation length (1000 tCO2e/y) | | | | | | | 00=,000 |
| Carbon sink potential - High - Improve | | | | | | | -57,000 |
| plantations (1000 tCO2e/y) | | | | | | | 0.,000 |
| Carbon sink potential - High - Increase | | | | | | | _ |
| retention of HWP (1000 tCO2e/y) | | | | | | | 300,000 |
| Carbon sink potential - High - Increase | | | | | | | -60,000 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -242,000 |
| cropland (1000 tCO2e/y) | | | | | | | , |
| Carbon sink potential - High - Reforest | | | | | | | _ |
| pasture (1000 tCO2e/y) | | | | | | | 264,000 |
| Carbon sink potential - High - Restore | | | | | | | -178,000 |
| productivity (1000 tCO2e/y) | | | | | | | , |
| Carbon sink potential - Low - Accelerate | | | | | | | -24,500 |
| regeneration (1000 tC02e/y) | | | | | | | , |
| Carbon sink potential - Low - All (not | | | | | | | _ |
| counting overlap) (1000 tCO2e/y) | | | | | | | 505,500 |
| Carbon sink potential - Low - Avoid | | | | | | | -14,000 |
| deforestation (1000 tCO2e/y) | | | | | | | , |
| Carbon sink potential - Low - Extend | | | | | | | -116,000 |
| rotation length (1000 tCO2e/y) | | | | | | | ., |
| Carbon sink potential - Low - Improve | | | | | | | -29,000 |
| plantations (1000 tCO2e/y) | | | | | | | , |
| Carbon sink potential - Low - Increase | | | | | | | -100,000 |
| retention of HWP (1000 tC02e/y) | | | | | | | , |
| Carbon sink potential - Low - Increase | | | | | | | -21,000 |
| trees outside forests (1000 tC02e/y) | | | | | | | , |
| Carbon sink potential - Low - Reforest | | | | | | | -121,000 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -20,000 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Restore | | | | | | | -60,000 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Accelerate | | | | | | | -36,700 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - All (not | | | | | | | - |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1,020,200 |
| Carbon sink potential - Mid - Avoid | | | | | | | -49,000 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Extend | | | | | | | -209,000 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Improve | | | | | | | -42,500 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | - |
| retention of HWP (1000 tCO2e/y) | | | | | | | 200,000 |

Table 13: E+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|----------|
| Carbon sink potential - Mid - Increase trees outside forests (1000 tC02e/y) | | | | | | | -40,500 |
| Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | | | | | | | -181,500 |
| Carbon sink potential - Mid - Reforest | | | | | | | -142,000 |
| pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore | | | | | | | -119,000 |
| productivity (1000 tCO2e/y) Land impacted for carbon sink potential - | | | | | | | 8,000 |
| High - Accelerate regeneration (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - High - Avoid deforestation (over 30 years) | | | | | | | 11,373 |
| (1000 hectares) Land impacted for carbon sink potential - High - Extend rotation length (1000 | | | | | | | 154,000 |
| hectares) Land impacted for carbon sink potential - | | | | | | | 21,000 |
| 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 |
| 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) | | | | | | | 10,677 |
| (1000 hectares) Land impacted for carbon sink potential - Low - Extend rotation length (1000 | | | | | | | 59,000 |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 | | | | | | | 10,500 |
| Land impacted for carbon sink potential - Low - Increase retention of HWP (1000 | | | | | | | 0 |
| hectares) Land impacted for carbon sink potential - Low - Increase trees outside forests | | | | | | | 3,000 |
| (1000 hectares) Land impacted for carbon sink potential - | | | | | | | 8,000 |
| Low - Reforest cropland (1000 hectares) Land impacted for carbon sink potential - | | | | | | | 1,300 |
| Low - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - Low - Restore productivity (1000 hectares) | | | | | | | 35,700 |

Table 13: E+ scenario - PILLAR 6: Land sinks - Forests (continued)

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

Table 14: E+ 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 15: E+ scenario - IMPACTS - Capital Investments

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|-------|-------|-------|-------|-------|
| Capital under construction - Cumulative | 126 | 343 | 647 | 1,082 | 1,632 | 2,353 | 2,515 |
| from 2021 - CO2 Transport & Storage | | | | | | | |
| (billion \$2018) | | | | | | | |
| Capital under construction - Cumulative | 0.3 | 93 | 47.6 | 6.65 | 11.4 | 30.4 | 0 |
| from 2021 - Distribution (billion \$2018) | | | | | | | |
| Capital under construction - Cumulative | 196 | 622 | 1,263 | 2,037 | 2,888 | 3,815 | 4,450 |
| from 2021 - Fuels Conversion (billion | | | | | | | |
| \$2018) | | | | | | | |
| Capital under construction - Cumulative | 38.1 | 227 | 450 | 800 | 1,161 | 1,488 | 1,758 |
| from 2021 - Industry (billion \$2018) | | | | | | | |
| Capital under construction - Cumulative | 36 | 37 | 65.4 | 69.9 | 61.7 | 64.6 | 0 |
| from 2021 - Power Generation (billion | | | | | | | |
| \$2018) | | | | | | | |
| Capital under construction - Cumulative | 398 | 1,326 | 2,510 | 4,064 | 5,863 | 7,997 | 8,724 |
| from 2021 - Total System (billion \$2018) | | | | | | | |
| Capital under construction - Cumulative | 2.43 | 3.8 | 36.8 | 67.2 | 109 | 246 | 0 |
| from 2021 - Transmission (billion \$2018) | | | | | | | |

Table 16: E+ scenario - IMPACTS - Fossil fuel industries

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|---------|
| Natural gas consumption - Annual (tcf) | | 23,206 | 19,562 | 15,689 | 11,811 | 7,431 | 5,154 |
| Natural gas consumption - Cumulative | | | | | | | 472,555 |
| (tcf) | | | | | | | |
| Natural gas production - Annual (tcf) | | 36,257 | 34,274 | 29,850 | 25,241 | 20,015 | 15,548 |
| Natural gas production - Cumulative (tcf) | | | | | | | 872,962 |
| Oil consumption - Annual (million bbls) | | 5,924 | 5,196 | 4,119 | 3,106 | 2,308 | 1,650 |
| Oil consumption - Cumulative (million | | | | | | | 126,839 |
| bbls) | | | | | | | |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 4,127 | 3,354 | 2,232 |
| Oil production - Cumulative (million bbls) | | | | | | | 136,632 |

Table 17: E+ scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|---------|--------|--------|--------|--------|-------|
| Monetary damages from air pollution - | | 22,661 | 29.5 | 28.3 | 24.2 | 16.6 | 1.24 |
| Coal (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 13,340 | 9,212 | 6,424 | 5,716 | 3,438 | 1,376 |
| Natural Gas (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 102,386 | 96,814 | 74,557 | 43,657 | 20,044 | 7,790 |
| Transportation (million 2019\$) | | | | | | | |
| Premature deaths from air pollution - | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Coal (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1,506 | 1,040 | 725 | 645 | 388 | 155 |
| Natural Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 11,515 | 10,889 | 8,385 | 4,910 | 2,254 | 876 |
| Transportation (deaths) | | | | | | | |

Table 18: 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) | | 580,064 | 723,845 | 923,207 | 1,030,957 | 1,125,842 | 1,362,050 |
| By economic sector - Manufacturing | | 626,159 | 816,219 | 958,346 | 880,897 | 806,619 | 910,451 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 458,886 | 352,163 | 267,470 | 175,190 | 114,496 | 65,837 |
| By economic sector - Other (jobs) | | 55,963 | 80,318 | 117,907 | 146,042 | 174,989 | 239,733 |
| By economic sector - Pipeline (jobs) | | 46,153 | 47,909 | 40,500 | 29,005 | 22,744 | 20,678 |
| By economic sector - Professional (jobs) | | 329,442 | 391,194 | 505,157 | 591,345 | 679,998 | 852,768 |
| By economic sector - Trade (jobs) | | 298,081 | 309,842 | 357,203 | 384,375 | 422,446 | 520,017 |
| By economic sector - Utilities (jobs) | | 479,672 | 554,950 | 731,228 | 852,603 | 944,853 | 1,147,421 |
| By education level - All sectors - | | 874,912 | 1,015,251 | 1,226,424 | 1,301,277 | 1,373,772 | 1,647,937 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - All sectors - | | 642,516 | 708,555 | 822,294 | 849,811 | 887,001 | 1,052,119 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - All sectors - Doctoral | | 21,320 | 23,411 | 27,652 | 29,842 | 32,509 | 39,510 |
| degree (jobs) | | | | | | | |
| By education level - All sectors - High | | 1,215,732 | 1,401,313 | 1,673,456 | 1,742,024 | 1,815,521 | 2,163,478 |
| school diploma or less (jobs) | | | | | | | |
| By education level - All sectors - Masters | | 151,556 | 166,432 | 195,189 | 206,094 | 219,322 | 263,178 |
| or professional degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 15,986 | 17,669 | 21,356 | 22,114 | 29,865 | 47,668 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Biomass sector - | | 14,722 | 15,948 | 18,940 | 20,437 | 29,494 | 47,871 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 722 | 813 | 1,007 | 1,194 | 1,857 | 3,040 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Biomass sector - High | | 47,969 | 54,390 | 62,467 | 57,137 | 63,198 | 93,676 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Biomass sector - | | 4,048 | 4,493 | 5,404 | 5,950 | 8,640 | 13,975 |
| Masters or professional degree (jobs) | | | | | | | |

Table 18: E+ scenario - IMPACTS - Jobs (continued)

| Table 18: E+ Scenario - IMPAG 15 - Jobs (Co | пипиеиј | | | | | | |
|--|---------|-----------|------------|---------|---------|---------|----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By education level - CO2 sector - | | 1,558 | 22,572 | 19,168 | 8,857 | 13,541 | 26,104 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - CO2 sector - | | 825 | 10,799 | 9,539 | 4,738 | 7,228 | 12,830 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - CO2 sector - Doctoral | | 18.6 | 201 | 194 | 110 | 168 | 259 |
| degree (jobs) | | | | | | | |
| By education level - CO2 sector - High | | 1,928 | 27,904 | 23,782 | 11,037 | 16,909 | 32,608 |
| school diploma or less (jobs) | | .,0 | | | , | ,. | , |
| By education level - CO2 sector - Masters | | 187 | 2,381 | 2,128 | 1,079 | 1,645 | 2,848 |
| or professional degree (jobs) | | 101 | 2,001 | 2,120 | 1,017 | 1,040 | 2,040 |
| By education level - Coal sector - | | 21,423 | 5,650 | 2,974 | 2,582 | 2,322 | 2,057 |
| Associates degree or some college (jobs) | | 21,423 | 3,630 | 2,714 | 2,362 | 2,322 | 2,001 |
| By education level - Coal sector - | | 13,942 | 3,430 | 1,692 | 1,518 | 1 /.11 | 1,291 |
| • | | 13,942 | 3,430 | 1,092 | 1,516 | 1,411 | 1,291 |
| Bachelors degree (jobs) | | F11 | 100 | F4 F | | | |
| By education level - Coal sector - Doctoral | | 511 | 123 | 51.5 | 48 | 46.1 | 43.4 |
| degree (jobs) | | | | | | | |
| By education level - Coal sector - High | | 30,308 | 8,917 | 5,756 | 4,901 | 4,320 | 3,747 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Coal sector - Masters | | 3,429 | 835 | 370 | 334 | 313 | 288 |
| or professional degree (jobs) | | | | | | | |
| By education level - Grid sector - | | 181,208 | 239,261 | 372,899 | 465,469 | 541,393 | 669,232 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Grid sector - | | 103,842 | 136,215 | 210,933 | 261,630 | 302,411 | 371,528 |
| Bachelors degree (jobs) | | · | | | | | • |
| By education level - Grid sector - Doctoral | | 2,994 | 3,861 | 5,878 | 7,168 | 8,146 | 9,840 |
| degree (jobs) | | _, | 5,551 | ,,,,, | ., | 7, 10 | .,. |
| By education level - Grid sector - High | | 231,717 | 307,496 | 481,654 | 604,229 | 706,290 | 877,399 |
| school diploma or less (jobs) | | 201,111 | 301,470 | 401,004 | 004,227 | 100,270 | 011,077 |
| By education level - Grid sector - Masters | | 26,130 | 34,169 | 52,749 | 65,228 | 75,170 | 92,077 |
| or professional degree (jobs) | | 20,130 | 34,107 | 32,149 | 05,226 | 13,110 | 72,011 |
| | | 100.010 | 1/ 5 / / / | 110 705 | 107.010 | 75 / 00 | F0 F00 |
| By education level - Natural gas sector - | | 180,210 | 145,444 | 118,725 | 106,910 | 75,492 | 53,529 |
| Associates degree or some college (jobs) | | 105 / 0 / | 004/5 | 70 /// | (0.150 | /7005 | |
| By education level - Natural gas sector - | | 125,434 | 99,145 | 78,646 | 68,153 | 47,005 | 32,235 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 4,168 | 3,263 | 2,560 | 2,196 | 1,499 | 1,002 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 220,352 | 177,991 | 144,372 | 127,389 | 89,118 | 62,586 |
| High school diploma or less (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 30,731 | 24,150 | 19,086 | 16,571 | 11,420 | 7,815 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 13,674 | 13,245 | 13,298 | 10,139 | 9,866 | 14,521 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 14,781 | 14,284 | 14,307 | 10,882 | 10,565 | 15,514 |
| Bachelors degree (jobs) | | , - | , - | , | -, | ., | -,- |
| By education level - Nuclear sector - | | 648 | 622 | 619 | 468 | 452 | 660 |
| Doctoral degree (jobs) | | 0.0 | 022 | 0.7 | .00 | .02 | 000 |
| By education level - Nuclear sector - High | | 16,974 | 16,486 | 16,595 | 12,684 | 12,374 | 18,257 |
| school diploma or less (jobs) | | 10,714 | 10,400 | 10,373 | 12,004 | 12,014 | 10,231 |
| By education level - Nuclear sector - | | 4,001 | 3,860 | 3,859 | 2,931 | 2,841 | 4,164 |
| • | | 4,001 | 3,660 | 3,637 | 2,731 | 2,041 | 4,104 |
| Masters or professional degree (jobs) | | 005 517 | 101.007 | 157,000 | 110 077 | 07.105 | F0 / F / |
| By education level - Oil sector - Associates | | 205,517 | 181,086 | 156,220 | 113,377 | 84,105 | 53,454 |
| degree or some college (jobs) | | 044.000 | 100.000 | 457.707 | 444 (70 | 04.477 | |
| By education level - Oil sector - Bachelors | | 211,988 | 183,998 | 156,434 | 111,473 | 81,174 | 50,468 |
| degree (jobs) | | | | | | | |
| By education level - Oil sector - Doctoral | | 6,849 | 5,981 | 5,123 | 3,669 | 2,686 | 1,676 |
| degree (jobs) | | | | | | | |
| By education level - Oil sector - High | | 317,656 | 281,308 | 243,630 | 178,026 | 132,908 | 85,196 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Oil sector - Masters or | | 48,078 | 41,558 | 35,209 | 24,945 | 18,063 | 11,149 |
| professional degree (jobs) | | | | | - | | - |
| | | | | | | | |

Table 18: E+ scenario - IMPACTS - Jobs (continued)

| Py education level - Solar PV sector - Associates degree or some college (jobs) Py education level - Solar PV sector - High school diploma or less (jobs) Py education level - Solar PV sector - Solar PV se | Table 18: E+ scenario - IMPACTS - Jobs (co | ontinuedJ | | | | | | |
|--|---|-----------|---------|---------|---------|---------|---------|----------|
| Associates degree or some college (jobs) By delucation (seel's - Solar PV sector - 95,882 138,470 182,673 191,608 206,823 269,992 Bachelors degree (jobs) By delucation (seel' - Solar PV sector - 10,600 231,993 327,184 424,471 437,706 443,185 591,893 school diploma or less (jobs) By delucation (seel' - Solar PV sector - 10,600 231,993 327,184 424,471 437,706 443,185 591,893 school diploma or less (jobs) By delucation (seel' - Solar PV sector - 10,600 231,993 327,184 424,471 437,706 443,185 591,893 school diploma or less (jobs) By delucation (seel' - Solar PV sector - 10,600 106,265 149,191 179,373 200,891 250,390 school diploma or less (jobs) By delucation (seel' - Wind sector - 10,600 106,265 149,191 179,373 200,891 250,390 school diploma or less (jobs) By delucation (seel' - Wind sector - 10,600 106,265 149,191 179,373 200,891 250,390 school diploma or less (jobs) By delucation (seel' - Wind sector - 10,600 174,250 149,191 179,373 200,891 250,390 school diploma or less (jobs) By resource sector - 10,600 174,270 25,100 36,192 45,552 53,135 66,610 or professional degree (jobs) By resource sector - 10,600 140,270 25,100 100,471 106,831 133,053 206,231 By resource sector - 10,600 140,470 140,470 140,470 140,470 140,470 140,470 By resource sector - 10,600 140,470 | | 2020 | | 2030 | 2035 | 2040 | 2045 | 2050 |
| Per deutoation level - Solar PV sector - 95,882 138,470 182,673 191,608 206,823 269,992 | | | 164,788 | 234,837 | 307,393 | 320,490 | 343,060 | 443,850 |
| Bachelors degree (jobs) 3,060 | | | | | | | | |
| Syeducation level - Solar PV sector - Doctoral degree (jobs) Syeducation level - Solar PV sector - High school (place) Syeducation level - Solar PV sector - High school (place) Syeducation level - Solar PV sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - High school diploma or less (jobs) Syeducation level - Wind sector - High school diploma or less (jobs) Syeducation level - Wind sector - High school diploma or less (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Masters or professional degree (jobs) Syeducation level - Wind sector - Syeducation le | | | 95,882 | 138,470 | 182,673 | 191,608 | 206,823 | 269,992 |
| Doctoral degree [jobs] Postoral degree [jo | | | | | | | | |
| Sy education level - Solar PV sector - High school diploma or less (tobs) Solar PV sector - Solar | By education level - Solar PV sector - | | 3,060 | 4,368 | 6,000 | 6,748 | 7,640 | 10,419 |
| school diploma or less (jobs) By education level - Solar PV sector - Masters or professional degree (jobs) By education level - Wind sector - 90,548 By education level - Wind sector - 90,548 By education level - Wind sector - 61,100 By education level - Wind sector - 90,548 By education level - Wind sector - 61,100 By essures sector - 60,100 By essures sector - 60,100 By essures sector - 60,100 By essures sector - 81,100 By essures sector - 81 | Doctoral degree (jobs) | | | | | | | |
| Py education level - Solar PV sector- | By education level - Solar PV sector - High | | 231,393 | 327,184 | 424,471 | 437,706 | 463,185 | 591,893 |
| Masters or professional degree [jobs] 90,548 155,487 214,391 251,340 274,127 337,524 Associates degree or some college (jobs) 90,548 155,487 214,391 251,340 274,127 337,524 Associates degree or some college (jobs) 91,000 106,265 149,131 179,373 200,891 250,390 2 | school diploma or less (jobs) | | | | | | | |
| By education level - Wind sector - Associates degree or some college (jobs) Structuration level - Wind sector - Bachelors degree (jobs) Structuration level - Wind sector - Bachelors degree (jobs) Structuration level - Wind sector - State Structuration level - Wind sector - Doctoral degree (jobs) Structuration level - Wind sector - High Bachelors degree (jobs) Structuration level - Wind sector - High Bachelors degree (jobs) Structuration level - Wind sector - High Bachelors degree (jobs) Structuration level - Wind sector - High Bachelors degree (jobs) Structuration level - Wind sector - High Bachelors degree (jobs) Structuration level - Wind sector - High Bachelors degree (jobs) Structuration level - Wind sector - Masters 14,270 25,102 36,192 45,552 53,135 66,610 or professional degree (jobs) Structuration level - Wind sector - Masters 14,270 25,102 36,192 45,552 53,135 66,610 or professional degree (jobs) Structuration level - Wind sector - Masters 14,270 25,102 36,192 45,552 53,135 66,610 or professional degree (jobs) Structuration level - Wind sector - Mind Jobs Structuration level - Wind sector - Mind Jobs Structuration level - Wind sector - Masters 14,270 25,102 36,192 45,552 53,135 66,610 39,765 10,643 33,313 30,533 30,533 30,62,333 30,634 30,634 30 | By education level - Solar PV sector - | | 20,683 | 29,884 | 40,194 | 43,503 | 48,096 | 64,253 |
| Associates degree or some college (jobs) By education level - Wind sector - Bochelors degree (jobs) By education level - Wind sector - Doctoral degree (jobs) By education level - Wind sector - Doctoral degree (jobs) By education level - Wind sector - High Sy education level - Wind sector - Masters Sy resource sector - Biomass (jobs) By education level - Wind sector - Masters Sy resource sector - Biomass (jobs) By resource sector - Biomass (jobs) By resource sector - Coal (jobs) By resource sector - Coal (jobs) By resource sector - Coal (jobs) By resource sector - Natural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Nuclear (jobs) By resource sector - Solar (jobs) By resource sector - Solar (jobs) By resource sector - Solar (jobs) By resource sector - Wind (jobs) By resource sector - | Masters or professional degree (jobs) | | | | | | | |
| By education level - Wind sector - Bachelors degree (jobs) By education level - Wind sector - 2,350 | By education level - Wind sector - | | 90,548 | 155,487 | 214,391 | 251,340 | 274,127 | 337,524 |
| Bachelors degree (jobs) Preducation level - Wind sector - Doctoral degree (jobs) Preducation level - Wind sector - High Sy deducation level - Wind sector - Masters of 14,270 25,102 36,192 45,552 53,135 66,610 327,219 398,115 327,219 308,916 327,219 398,115 327,219 308,916 327,219 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 398,115 337,121 337,121 398,115 337,121 398,115 337,121 337,12 | Associates degree or some college (jobs) | | | | | | | |
| Eyeducation level - Wind sector - Doctoral degree (jobs) 117,435 199,638 270,729 308,916 327,219 398,115 329,010 327,219 398,115 329,010 327,219 398,115 329,010 327,219 398,115 329,010 327,219 398,115 329,010 327,219 398,115 329,010 329,010 327,219 398,115 329,010 329,0 | By education level - Wind sector - | | 61,100 | 106,265 | 149,131 | 179,373 | 200,891 | 250,390 |
| Doctoral degree (jobs) By education level - Wind sector - High school diploma or less (jobs) 117,435 199,638 270,729 308,916 327,219 398,115 school diploma or less (jobs) By education level - Wind sector - Masters or professional degree (jobs) By resource sector - Cool (jobs) By resource sector - Cool (jobs) 83,448 93,313 109,174 106,831 133,053 206,231 By resource sector - Cool (jobs) 4,517 63,856 54,811 25,821 39,491 74,649 By resource sector - Cool (jobs) 69,612 18,956 10,843 9,383 8,412 74,269 By resource sector - Gold (jobs) 545,891 721,002 1,124,114 1,403,724 1,633,410 2,020,070 By resource sector - Nuclear (jobs) 550,876 449,993 363,389 32,1219 224,534 157,167 By resource sector - Nuclear (jobs) 50,077 48,496 48,678 37,104 36,098 53,115 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Solar (jobs) 515,805 734,743 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 773,424 76,646 | Bachelors degree (jobs) | | | | | | | |
| Doctoral degree (jobs) Py education level - Wind sector - High school diploma or less (jobs) 117,435 199,638 270,729 308,916 327,219 398,115 school diploma or less (jobs) Py education level - Wind sector - Masters or professional degree (jobs) Py resource sector - Biomass (jobs) Ry resource sector - Biomass (jobs) Ry resource sector - Coal (jobs) Ry resource sector - Goal (jobs) Ry resource sector - Goal (jobs) Ry resource sector - Goal (jobs) Ry resource sector - Ry Ry resource sector - Ry | By education level - Wind sector - | | 2,350 | 4,179 | 6,218 | 8,241 | 10,015 | 12,570 |
| Sy education level - Wind sector - High school diploma or less (jobs) 117,435 199,638 270,729 308,916 327,219 398,115 398,115 398,115 308,016 327,219 398,115 308,016 327,219 398,115 308,016 327,219 398,115 308,016 327,219 398,115 308,016 327,219 398,115 308,016 327,219 398,115 308,016 327,219 398,115 308,016 308,016 327,219 398,115 308,016 30 | Doctoral degree (jobs) | | | | | | | |
| school diploma or less (jobs) By education level - Wind sector - Masters 14,270 25,102 36,192 45,552 53,135 66,610 By resource sector - Biomass (jobs) 83,448 93,313 109,174 106,831 133,053 206,231 By resource sector - Coal (jobs) 4,517 63,856 54,811 25,821 39,491 74,649 By resource sector - Coal (jobs) 56,612 18,956 10,843 9,383 8,412 74,649 By resource sector - Natural Gas (jobs) 560,896 449,993 363,389 321,219 226,534 157,167 By resource sector - Nuclear (jobs) 50,077 48,496 48,678 37,104 36,098 53,115 By resource sector - Wild (jobs) 790,088 693,392 556,616 431,490 318,938 201,943 By resource sector - Wild (jobs) 790,088 693,392 556,616 341,490 318,938 201,943 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,062,209 By resource sector - Wild (jobs | | | 117,435 | 199,638 | 270,729 | 308,916 | 327,219 | 398,115 |
| Py education level - Wind sector - Masters or professional degree (jobs) Sy resource sector - Biomass (jobs) Sy resource sector - Biomass (jobs) Sy resource sector - Biomass (jobs) Sy resource sector - CO2 (jobs) Sy resource sector - Grid (jobs) Sy resource sector - Grid (jobs) Sy resource sector - Grid (jobs) Sy resource sector - Natural Gas (jobs) Sy resource sector - Solar (jobs) Sy resource sector - S | | | | , | , | • | • | |
| or professional degree (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 - Co3 (jobs) 69,612 18,956 10,843 9,383 8,412 7,426 By resource sector - Co4 (jobs) 54,891 721,002 11,24,114 1,403,724 1,633,410 20,207 By resource sector - Natural Gas (jobs) 560,896 449,993 363,389 321,219 224,534 157,167 By resource sector - Nuclear (jobs) 790,088 693,992 361,368 370,40 318,938 201,933 By resource sector - Violin (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Violin (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Violin (jobs) 315,800 74,742 86,732 66,618 67,224 66,160 66,160 66,160 66,160 < | | | 14,270 | 25.102 | 36.192 | 45.552 | 53.135 | 66,610 |
| By resource sector - Biomass (jobs) | | | , | | 20, | , | | |
| By resource sector - COZ (jobs) | | | 83,448 | 93,313 | 109.174 | 106.831 | 133.053 | 206.231 |
| By resource sector - Coal (jobs) 69,612 18,956 10,843 9,383 8,412 7,426 | | | | | | | | |
| By resource sector - Natural Gas (jobs) 546,891 721,002 1124,114 1,403,724 1,633,410 2,020,077 | | | | | | | | |
| By resource sector - Natural Gas (jobs) 560,896 449,993 363,389 321,219 224,534 157,167 By resource sector - Nuclear (jobs) 50,077 48,496 48,678 37,104 36,098 53,115 37,098 59,098 59,093 596,616 431,490 318,938 201,943 By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Wind (jobs) 285,703 490,671 676,661 676,661 793,422 865,386 1,065,209 865,386 1,065,209 861,399 53,204 55,103 58,458 62,415 64,160 62,869 64,234 66,184 67,224 67,032 1,000,054 64,160 62,869 64,234 66,184 67,224 67,032 1,000,054 64,160 64,160 67,032 64,160 | | | | | | | | |
| By resource sector - Nuclear (jobs) 50,077 48,496 48,678 37,104 36,098 53,115 39 y resource sector - Solar (jobs) 790,088 693,932 596,616 431,490 318,938 201,943 38 y resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 318,938 201,943 38,938 201,943 38,938 201,943 38,938 201,943 38,938 201,943 38,938 201,943 38,938 201,943 38,938 201,943 38,938 201,943 38,938 201,943 38,938 201,943 38,938 30,400,671 676,661 793,422 865,386 1,065,205 36,406 367,405 | | | | | | | | |
| By resource sector - Oil (jobs) | | | | | | | | |
| By resource sector - Solar (jobs) 515,805 734,743 960,731 1,000,054 1,068,804 1,380,400 By resource sector - Wind (jobs) 285,703 490,671 676,661 793,422 865,386 1,065,205 Before sector - Wind (jobs) 51,939 53,204 55,103 58,458 62,415 64,160 Ber job 51,939 53,204 55,103 58,458 62,415 64,160 Ber job Bed job 62,869 64,234 66,184 67,224 67,032 66,180 Bed job 62,869 64,234 66,184 67,224 67,032 64,248 66,184 67,224 67,032 64,248 66,184 67,244 68,369 69,109 62,539 63,375 64,248 65,159 66,110 67,102 64,249 65,159 66,110 67,102 64,249 66,244 67,110 67,844 68,369 69,119 69,706 68,2019 per job 62,539 66,244 67,110 67,844 68,369 69,119 69,706 68,2019 per job 65,834 66,720 67,650 68,456 69,277 69,993 65,009 65,834 66,720 67,650 68,456 69,277 69,993 65,009 65 | | | | | | | | |
| By resource sector - Wind (jobs) 285,703 490,671 676,661 793,422 865,386 1,065,205 Median wages - Annual - Biomass (\$2019 51,939 53,204 55,103 58,458 62,415 64,160 62,015 62,869 64,234 66,184 67,224 67,032 | | | | | | | | |
| Median wages - Annual - Biomass (\$2019 per job) 51,939 53,204 55,103 58,458 62,415 64,160 Median wages - Annual - CO2 (\$2019 per job) 63,115 62,869 64,234 66,184 67,224 67,032 Median wages - Annual - COal (\$2019 per job) 60,501 59,195 55,643 56,541 57,484 58,469 Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 67,102 Median wages - Annual - Natural Gas (\$2019 per job) 66,244 67,110 67,844 68,369 69,119 69,706 Median wages - Annual - Nuclear (\$2019 per job) 71,486 73,188 74,974 76,846 78,808 80,864 Median wages - Annual - Oil (\$2019 per job) 65,834 66,720 67,650 68,456 69,277 69,993 Median wages - Annual - Wind (\$2019 per job) 55,418 56,093 56,985 58,064 59,155 60,323 Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 | | | | | | | | |
| Der job Median wages - Annual - CO2 (\$2019 per job) Median wages - Annual - CO2 (\$2019 per job) Median wages - Annual - CO2 (\$2019 per job) Median wages - Annual - CO2 (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Natural Gas (\$2019 per job) Median wages - Annual - Natural Gas (\$2019 per job) Median wages - Annual - Nuclear (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 job) Median wages - Annual - Wind (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 job) Median wages - Annual - Wind (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 job) Median wages - Annual - Wind (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 job) Median wages - Annual - Wind (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 job) Median wages - Annual - Wind (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 job) Median wages - Annual - Wind (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 job) Median wages - Annual - Dil (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 job) Median wages - Annual - Dil (\$2019 per job) S8,179 S9,132 60,462 62,327 64,299 65,507 69,993 60,462 62,327 64,299 65,507 69,993 60,462 62,327 64,299 65,507 69,993 60,462 62,327 64,299 65,507 69,993 60,462 62,327 64,299 65,507 69,993 60,462 62,327 64,299 65,507 60,462 62,327 64,299 65,507 60,462 | | | | | | | | |
| Median wages - Annual - CO2 (\$2019 per job) 63,115 62,869 64,234 66,184 67,224 67,032 job) Median wages - Annual - Coal (\$2019 per job) 60,501 59,195 55,643 56,541 57,484 58,469 Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 67,102 Median wages - Annual - Natural Gas (\$2019 per job) 66,244 67,110 67,844 68,369 69,119 69,706 Median wages - Annual - Nuclear (\$2019 per job) 71,486 73,188 74,974 76,846 78,808 80,864 Median wages - Annual - Oil (\$2019 per job) 65,834 66,720 67,650 68,456 69,277 69,993 Median wages - Annual - Solar (\$2019 per job) 55,418 56,093 56,985 58,064 59,155 60,323 Median wages - Annual - Wind (\$2019 per job) 55,418 56,093 56,985 58,064 59,155 60,323 Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 < | = | | 51,939 | 53,204 | 55,103 | 58,458 | 62,415 | 64,160 |
| Job Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Natural Gas (\$2019 per job) Median wages - Annual - Natural Gas (\$2019 per job) Median wages - Annual - Nuclear (\$2019 per job) Median wages - Annual - Nuclear (\$2019 per job) Median wages - Annual - Nuclear (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Wind (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) Median wages - Annual - Sol | | | (0.44= | 10.010 | | | | /= |
| Median wages - Annual - Coal (\$2019 per job) 60,501 59,195 55,643 56,541 57,484 58,469 job) Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 67,102 Median wages - Annual - Natural Gas (\$2019 per job) 66,244 67,110 67,844 68,369 69,119 69,706 Median wages - Annual - Nuclear (\$2019 per job) 71,486 73,188 74,974 76,846 78,808 80,864 Median wages - Annual - Oil (\$2019 per job) 65,834 66,720 67,650 68,456 69,277 69,993 Median wages - Annual - Solar (\$2019 per job) 55,418 56,093 56,985 58,064 59,155 60,323 Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 On-Site or In-Plant Training - Biomass sector - 1 to 4 years (jobs) 8,420 9,462 11,465 11,778 15,479 24,30 | | | 63,115 | 62,869 | 64,234 | 66,184 | 67,224 | 67,032 |
| Description | | | | | | | | |
| Median wages - Annual - Grid (\$2019 per job) | | | 60,501 | 59,195 | 55,643 | 56,541 | 57,484 | 58,469 |
| Median wages - Annual - Natural Gas (\$2019 per job) Median wages - Annual - Nuclear (\$2019 per job) T1,486 T3,188 T4,974 T6,846 T8,808 80,864 Per job T1,486 T3,188 T4,974 T6,846 T8,808 T8,808 T6,809 | | | | | | | | |
| Median wages - Annual - Natural Gas (\$2019 per job) 66,244 67,110 67,844 68,369 69,119 69,706 Median wages - Annual - Nuclear (\$2019 per job) 71,486 73,188 74,974 76,846 78,808 80,864 Median wages - Annual - Oil (\$2019 per job) 65,834 66,720 67,650 68,456 69,277 69,993 Median wages - Annual - Solar (\$2019 per job) 55,418 56,093 56,885 58,064 59,155 60,323 Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 Job Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 John Site or In-Plant Training - Biomass 8,420 9,462 11,465 11,778 15,479 24,303 Sector - 1 to 4 years (jobs) 2,630 2,899 3,633 3,912 5,516 8,939 On-Site or In-Plant Training - Biomass sector - None (jobs) 13,478 15,270 18,154 18,473 23,872 36,959 | ` ` . | | 62,539 | 63,375 | 64,248 | 65,159 | 66,110 | 67,102 |
| (\$2019 per job) Median wages - Annual - Nuclear (\$2019 per job) 71,486 73,188 74,974 76,846 78,808 80,864 per job) Median wages - Annual - Oil (\$2019 per job) 65,834 66,720 67,650 68,456 69,277 69,993 job) Median wages - Annual - Solar (\$2019 per job) 55,418 56,093 56,985 58,064 59,155 60,323 job) Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 job) 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 sector - 4 to 10 years (jobs) On-Site or In-Plant Training - Biomass sector - 4 to 10 years (jobs) 13,478 15,270 18,154 18,473 23,872 36,959 sector - None (jobs) On-Site or In-Plant Training - Biomass sector - Over 10 years (jobs) 58,4 624 716 660 802 1,299 sector - 1,091 years (jobs) 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 sector - 1,011 13,796 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | | | | | | | | |
| Median wages - Annual - Nuclear (\$2019 per job) 71,486 73,188 74,974 76,846 78,808 80,864 per job) Median wages - Annual - Oil (\$2019 per job) 65,834 66,720 67,650 68,456 69,277 69,993 Median wages - Annual - Solar (\$2019 per job) 55,418 56,093 56,985 58,064 59,155 60,323 Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 John 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 - None (jobs) 13,478 15,270 18,154 18,473 23,872 36,959 On-Site or In-Plant Training - Biomass sector - Up to 10 years (jobs) 58,337 65,059 75,205 72,008 87,384 134,729 On-Site or In-Plant Training - C02 sector - 1 to 4 years (jobs) 822 11,889 <td></td> <td></td> <td>66,244</td> <td>67,110</td> <td>67,844</td> <td>68,369</td> <td>69,119</td> <td>69,706</td> | | | 66,244 | 67,110 | 67,844 | 68,369 | 69,119 | 69,706 |
| Der job Median wages - Annual - Oil (\$2019 per job) Median wages - Annual - Solar (\$2019 per job) S5,418 S6,093 S6,985 S8,064 S9,155 G0,323 S6,507 S6,064 S6,067 S6,06 | | | | | | | | |
| Median wages - Annual - Oil (\$2019 per job) 65,834 66,720 67,650 68,456 69,277 69,993 Median wages - Annual - Solar (\$2019 per job) 55,418 56,093 56,985 58,064 59,155 60,323 Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 Job 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 - None (jobs) 13,478 15,270 18,154 18,473 23,872 36,959 On-Site or In-Plant Training - Biomass sector - Over 10 years (jobs) 58,337 65,059 75,205 72,008 87,384 134,729 On-Site or In-Plant Training - C02 sector - 1to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 On-Site or In-Plant Training - C02 sector - 20,20 398 5,916 4,982 | - | | 71,486 | 73,188 | 74,974 | 76,846 | 78,808 | 80,864 |
| Median wages - Annual - Solar (\$2019 per job) S5,418 S6,093 S6,985 S8,064 S9,155 60,323 S6,096 S6,096 S6,097 S8,179 S9,132 S6,042 S6,237 S6,299 S6,507 S6,096 S6,507 S6,096 S6,097 | | | | | | | | |
| Median wages - Annual - Solar (\$2019 per job) 55,418 56,093 56,985 58,064 59,155 60,323 job) Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 job) 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 jobs jobs jobs jobs jobs jobs jobs jobs | Median wages - Annual - Oil (\$2019 per | | 65,834 | 66,720 | 67,650 | 68,456 | 69,277 | 69,993 |
| Median wages - Annual - Wind (\$2019 per job) | job) | | | | | | | |
| Median wages - Annual - Wind (\$2019 per job) 58,179 59,132 60,462 62,327 64,299 65,507 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 Sector - 1 to 4 years (jobs) 2,630 2,899 3,633 3,912 5,516 8,939 Sector - 4 to 10 years (jobs) 3,478 15,270 18,154 18,473 23,872 36,959 Sector - None (jobs) 3,478 15,270 18,154 18,473 23,872 36,959 Sector - None (jobs) 584 624 716 660 802 1,299 Sector - Over 10 years (jobs) 58,337 65,059 75,205 72,008 87,384 134,729 Sector - Up to 1 year (jobs) 58,337 65,059 75,205 72,008 87,384 134,729 On-Site or In-Plant Training - C02 sector - 1 to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 On-Site or In-Plant Training - C02 sector - 2 sector - 398 5,916 | Median wages - Annual - Solar (\$2019 per | | 55,418 | 56,093 | 56,985 | 58,064 | 59,155 | 60,323 |
| On-Site or In-Plant Training - Biomass S,420 9,462 11,465 11,778 15,479 24,303 | job) | | | | | | | |
| On-Site or In-Plant Training - Biomass S,420 9,462 11,465 11,778 15,479 24,303 | Median wages - Annual - Wind (\$2019 per | | 58,179 | 59,132 | 60,462 | 62,327 | 64,299 | 65,507 |
| sector - 1 to 4 years (jobs) 2,630 2,899 3,633 3,912 5,516 8,939 sector - 4 to 10 years (jobs) 0n-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 - Over 10 years (jobs) 584 624 716 660 802 1,299 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 - C02 sector - 1 to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 on-Site or In-Plant Training - C02 sector - 2 sector - 1 to 4 years (jobs) 398 5,916 4,982 2,263 3,464 6,818 | = | | | | - | | - | |
| sector - 1 to 4 years (jobs) 2,630 2,899 3,633 3,912 5,516 8,939 sector - 4 to 10 years (jobs) 0n-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 - Over 10 years (jobs) 584 624 716 660 802 1,299 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 - C02 sector - 1 to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 on-Site or In-Plant Training - C02 sector - 2 sector - 1 to 4 years (jobs) 398 5,916 4,982 2,263 3,464 6,818 | On-Site or In-Plant Training - Biomass | | 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 - None (jobs) 13,478 15,270 18,154 18,473 23,872 36,959 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 - 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 - C02 sector - 1 to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 On-Site or In-Plant Training - C02 sector - 1 to 4 years (jobs) 398 5,916 4,982 2,263 3,464 6,818 | = | | | · | - | | - | |
| sector - 4 to 10 years (jobs) 13,478 15,270 18,154 18,473 23,872 36,959 sector - None (jobs) 584 624 716 660 802 1,299 sector - Over 10 years (jobs) 58,337 65,059 75,205 72,008 87,384 134,729 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 - C02 sector - 1 to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 on-Site or In-Plant Training - C02 sector - 2 sector - 1 to 4 years (jobs) 398 5,916 4,982 2,263 3,464 6,818 | | | 2.630 | 2.899 | 3.633 | 3.912 | 5.516 | 8.939 |
| 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 - Over 10 years (jobs) 584 624 716 660 802 1,299 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 - C02 sector - 1 to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 On-Site or In-Plant Training - C02 sector - 2 sector - 1 to 4 years (jobs) 398 5,916 4,982 2,263 3,464 6,818 | | | _,,,,, | _, | 5,555 | -7 | ,,,,,, | |
| sector - None (jobs) 584 624 716 660 802 1,299 sector - Over 10 years (jobs) 58,337 65,059 75,205 72,008 87,384 134,729 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 - C02 sector - 1 to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 On-Site or In-Plant Training - C02 sector - 2 sector - 1 sector - 2 sector - 398 5,916 4,982 2,263 3,464 6,818 | | | 13 478 | 15 270 | 18 154 | 18 473 | 23 872 | 36 959 |
| 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 - 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 - C02 sector - 1 to 4 years (jobs) 822 11,889 10,111 4,681 7,161 13,796 On-Site or In-Plant Training - C02 sector - 2,263 3,464 6,818 | | | 10, 110 | 10,210 | 10,10 1 | 10, 110 | 20,012 | 00,707 |
| sector - Over 10 years (jobs) 58,337 65,059 75,205 72,008 87,384 134,729 sector - Up to 1 year (jobs) 0n-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 - 2 years (jobs) 398 5,916 4,982 2,263 3,464 6,818 | | | 584 | 624 | 716 | 660 | 802 | 1 299 |
| 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 - 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 - 2 sector - 398 5,916 4,982 2,263 3,464 6,818 | | | 554 | 024 | 110 | 000 | 552 | 1,2// |
| sector - Up to 1 year (jobs) 822 11,889 10,111 4,681 7,161 13,796 1 to 4 years (jobs) 0n-Site or In-Plant Training - CO2 sector - 398 5,916 4,982 2,263 3,464 6,818 | | | 58 337 | 65 N50 | 75 205 | 72 በበዩ | 87387 | 137, 720 |
| 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 - 2 sector - 398 5,916 4,982 2,263 3,464 6,818 | | | 30,331 | 00,009 | 10,200 | 12,000 | 01,304 | 134,129 |
| 1 to 4 years (jobs) 398 5,916 4,982 2,263 3,464 6,818 | | | 000 | 11 000 | 10 111 | /. / 01 | 71/1 | 10 70/ |
| On-Site or In-Plant Training - CO2 sector - 398 5,916 4,982 2,263 3,464 6,818 | | | 822 | 11,007 | 10,111 | 4,081 | 7,161 | 13,796 |
| | | | 000 | F 01/ | / 000 | 0.070 | 0.777 | / 010 |
| 4 to 10 years (Jobs) | | | 398 | 5,916 | 4,982 | 2,263 | 3,464 | 6,818 |
| | 4 to 10 year's (Jobs) | | | | | | | |

Table 18: E+ scenario - IMPACTS - Jobs (continued)

| Table 18: <i>E+ scenario - IMPACTS - Jobs (co</i> | intinued) | | | | | | |
|---|-----------|---|-----------|---------|---------|---------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - CO2 sector - | | 696 | 9,738 | 8,397 | 3,989 | 6,102 | 11,439 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 47.2 | 703 | 590 | 267 | 408 | 805 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 2,554 | 35,610 | 30,731 | 14,621 | 22,355 | 41,790 |
| Up to 1 year (jobs) | | , | , | , . | , - | , | , - |
| On-Site or In-Plant Training - Coal sector - | | 10,870 | 2,930 | 1,588 | 1,369 | 1,222 | 1,074 |
| 1 to 4 years (jobs) | | 10,010 | 2,700 | 1,000 | 1,007 | 1,222 | 1,014 |
| On-Site or In-Plant Training - Coal sector - | | 4,169 | 1,017 | 428 | 368 | 328 | 287 |
| 4 to 10 years (jobs) | | 4,109 | 1,011 | 420 | 300 | 320 | 201 |
| On-Site or In-Plant Training - Coal sector - | | 10,259 | 2,664 | 1 / 10 | 10/.5 | 1 100 | 1.007 |
| | | 10,259 | 2,004 | 1,410 | 1,245 | 1,139 | 1,026 |
| None (jobs) | | 500 | 100 | /71 | /17 | 00.0 | 0// |
| On-Site or In-Plant Training - Coal sector - | | 502 | 120 | 47.1 | 41.7 | 38.2 | 34.4 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 43,813 | 12,226 | 7,370 | 6,360 | 5,685 | 5,004 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 94,286 | 124,689 | 194,641 | 243,343 | 283,483 | 350,975 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 41,409 | 54,750 | 85,444 | 106,798 | 124,383 | 153,955 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 83,130 | 109,551 | 170,425 | 212,356 | 246,578 | 304,311 |
| None (jobs) | | | | - | | | |
| On-Site or In-Plant Training - Grid sector - | | 5,368 | 7,093 | 11,063 | 13,819 | 16,084 | 19,896 |
| Over 10 years (jobs) | | | 1,212 | , | , | , | 11,515 |
| On-Site or In-Plant Training - Grid sector - | | 321,698 | 424,920 | 662,541 | 827,408 | 962,883 | 1,190,940 |
| Up to 1 year (jobs) | | 021,070 | 727,720 | 002,041 | 021,400 | 702,000 | 1,170,740 |
| On-Site or In-Plant Training - Natural gas | | 94,541 | 76,217 | 61,976 | 55,313 | 38,887 | 27,463 |
| | | 74,541 | 10,211 | 01,710 | 55,515 | 30,001 | 21,403 |
| sector - 1 to 4 years (jobs) | | /1000 | 0 / 111 | 00.007 | 05 001 | 17007 | 10.070 |
| On-Site or In-Plant Training - Natural gas | | 41,989 | 34,111 | 28,034 | 25,381 | 17,986 | 12,842 |
| sector - 4 to 10 years (jobs) | | 00.000 | 74.070 | 57.045 | 50 (44 | 05.000 | 0/ /00 |
| On-Site or In-Plant Training - Natural gas | | 89,308 | 71,273 | 57,315 | 50,611 | 35,322 | 24,690 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 4,983 | 4,077 | 3,385 | 3,110 | 2,221 | 1,594 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 330,074 | 264,314 | 212,678 | 186,805 | 130,118 | 90,578 |
| sector - Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 7,389 | 7,165 | 7,200 | 5,494 | 5,352 | 7,883 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 2,675 | 2,592 | 2,605 | 1,987 | 1,935 | 2,850 |
| sector - 4 to 10 years (jobs) | | | | | | | • |
| On-Site or In-Plant Training - Nuclear | | 8,964 | 8,672 | 8,696 | 6,622 | 6,437 | 9,462 |
| sector - None (jobs) | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | -, | ,,,,, | -, | 5, | ., |
| On-Site or In-Plant Training - Nuclear | | 251 | 243 | 244 | 186 | 181 | 266 |
| sector - Over 10 years (jobs) | | 201 | 240 | 277 | 100 | 101 | 200 |
| On-Site or In-Plant Training - Nuclear | | 30,798 | 29,824 | 29,934 | 22,814 | 22,194 | 32,654 |
| _ | | 30,176 | 27,024 | 27,734 | 22,014 | 22,174 | 32,034 |
| sector - Up to 1 year (jobs) | | 11/ / 05 | 100 / / 0 | 00 (07 | (/ 00/ | /7700 | 00.000 |
| On-Site or In-Plant Training - Oil sector - 1 | | 116,425 | 102,660 | 88,637 | 64,336 | 47,729 | 30,322 |
| to 4 years (jobs) | | / 1 0 = 0 | 011-0 | 21 (2) | 22.12= | 1=000 | |
| On-Site or In-Plant Training - Oil sector - | | 41,052 | 36,459 | 31,686 | 23,187 | 17,338 | 11,117 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 127,218 | 110,889 | 94,600 | 67,873 | 49,768 | 31,263 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 4,547 | 4,112 | 3,638 | 2,706 | 2,055 | 1,336 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 500,847 | 439,812 | 378,054 | 273,388 | 202,047 | 127,906 |
| Up to 1 year (jobs) | | . | • | | • | | , |
| On-Site or In-Plant Training - Solar PV | | 82,983 | 117,488 | 153,335 | 159,628 | 170,308 | 219,490 |
| sector - 1 to 4 years (jobs) | | ,,55 | , | 122,000 | ,525 | , | |
| On-Site or In-Plant Training - Solar PV | | 29,899 | 41,330 | 54,513 | 58,499 | 63,477 | 83,065 |
| sector - 4 to 10 years (jobs) | | 27,077 | 41,000 | 5-,515 | 55,477 | 50,411 | 00,000 |
| acctor - 4 to 10 years (juns) | | | | | | | <u></u> |

Table 18: E+ scenario - IMPACTS - Jobs (continued)

| Table 18: E+ scenario - IMPACTS - Jobs (cor | ntinuedJ | | | | | | |
|---|----------|-----------|-------------|------------|------------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - Solar PV | | 88,134 | 125,796 | 164,778 | 171,845 | 184,034 | 238,197 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 4,143 | 5,851 | 7,655 | 8,016 | 8,585 | 11,107 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 310,646 | 444,278 | 580,450 | 602,066 | 642,399 | 828,547 |
| sector - Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Total jobs - 1 | | 460,684 | 529,457 | 634,960 | 670,336 | 705,271 | 841,598 |
| to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Total jobs - 4 | | 180,122 | 206,337 | 249,955 | 270,475 | 289,645 | 347,264 |
| to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Total jobs - | | 470,789 | 539,227 | 641,862 | 672,087 | 705,638 | 845,311 |
| None (jobs) | | | | | | · | |
| On-Site or In-Plant Training - Total jobs - | | 22,722 | 26,766 | 32,811 | 35,322 | 37,584 | 45,188 |
| Over 10 years (jobs) | | , | ., | , - | ,- | , , , , , | -, |
| On-Site or In-Plant Training - Total jobs - | | 1,771,719 | 2,013,176 | 2,385,426 | 2,480,828 | 2,589,988 | 3,086,860 |
| Up to 1 year (jobs) | | .,, | | 2,000, .20 | _, .00,0_0 | _,007,700 | 0,000,000 |
| On-Site or In-Plant Training - Wind sector | | 44,948 | 76,957 | 106,007 | 124,393 | 135,650 | 166,292 |
| - 1 to 4 years (jobs) | | 44,740 | 10,701 | 100,001 | 124,070 | 100,000 | 100,272 |
| On-Site or In-Plant Training - Wind sector | | 15,900 | 27,264 | 38,630 | 48,080 | 55,219 | 67,391 |
| - 4 to 10 years (jobs) | | 13,700 | 21,204 | 36,630 | 40,000 | 33,219 | 01,371 |
| On-Site or In-Plant Training - Wind sector | | 49,603 | 85,374 | 118,087 | 139,074 | 152,387 | 187,964 |
| = | | 49,003 | 05,514 | 110,001 | 139,014 | 132,361 | 101,904 |
| - None (jobs) | | 0.000 | 20/2 | F / 70 | / F10 | 7000 | 0.050 |
| On-Site or In-Plant Training - Wind sector | | 2,298 | 3,943 | 5,473 | 6,518 | 7,209 | 8,850 |
| - Over 10 years (jobs) | | 170.050 | 007100 | / 00 / / 0 | /75.057 | F1/ 000 | (0/ 710 |
| On-Site or In-Plant Training - Wind sector | | 172,952 | 297,133 | 408,463 | 475,357 | 514,922 | 634,712 |
| - Up to 1 year (jobs) | | 500.000 | (7, , , , , | 040.050 | 0 (4 0) 5 | 000101 | 100/70/ |
| On-the-Job Training - All sectors - 1 to 4 | | 588,008 | 676,480 | 812,850 | 861,245 | 908,184 | 1,084,724 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 4 to 10 | | 169,526 | 196,581 | 241,260 | 264,166 | 284,985 | 343,527 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - None | | 161,120 | 181,252 | 213,541 | 222,332 | 233,363 | 279,915 |
| (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Over 10 | | 29,074 | 33,921 | 40,044 | 40,959 | 42,037 | 49,756 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Up to 1 | | 1,958,309 | 2,226,727 | 2,637,320 | 2,740,346 | 2,859,558 | 3,408,299 |
| year (jobs) | | | | | | | |
| On-the-Job Training - Biomass sector - 1 | | 9,212 | 10,374 | 12,819 | 13,599 | 18,521 | 29,345 |
| to 4 years (jobs) | | | | | | | |
| On-the-Job Training - Biomass sector - 4 | | 2,109 | 2,385 | 3,105 | 3,464 | 4,955 | 7,973 |
| to 10 years (jobs) | | | | | | | |
| On-the-Job Training - Biomass sector - | | 5,212 | 5,588 | 6,391 | 6,163 | 7,872 | 12,541 |
| None (jobs) | | | | | | | |
| On-the-Job Training - Biomass sector - | | 598 | 640 | 747 | 710 | 894 | 1,449 |
| Over 10 years (jobs) | | | | | | | • |
| On-the-Job Training - Biomass sector - Up | | 66,316 | 74,326 | 86,112 | 82,895 | 100,811 | 154,923 |
| to 1 year (jobs) | | | , | | . , | , - | , - |
| On-the-Job Training - CO2 sector - 1 to 4 | | 1,091 | 15,833 | 13,446 | 6,211 | 9,500 | 18,344 |
| years (jobs) | | ,,,,,, | , | , | -, | 1,000 | ,. |
| On-the-Job Training - CO2 sector - 4 to 10 | | 398 | 5,980 | 5,013 | 2,256 | 3,455 | 6,872 |
| years (jobs) | | 0,0 | 0,,00 | 0,010 | 2,200 | 0,100 | 0,012 |
| On-the-Job Training - CO2 sector - None | | 217 | 2,962 | 2,581 | 1,248 | 1,911 | 3,519 |
| (jobs) | | 211 | 2,702 | 2,301 | 1,240 | 1,711 | 0,017 |
| On-the-Job Training - CO2 sector - Over | | 45 | 643 | 552 | 260 | 398 | 761 |
| = | | 45 | 043 | 332 | 200 | 370 | 101 |
| 10 years (jobs) | | 0.7/7 | 20 / 20 | 00.010 | 15.077 | 07.007 | / 5 15 / |
| On-the-Job Training - CO2 sector - Up to 1 | | 2,767 | 38,439 | 33,219 | 15,847 | 24,226 | 45,154 |
| year (jobs) | | 10.007 | 0 / / 7 | 1000 | 1//0 | 1 / / 0 | 1.007 |
| On-the-Job Training - Coal sector - 1 to 4 | | 13,806 | 3,667 | 1,903 | 1,643 | 1,469 | 1,294 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Coal sector - 4 to 10 | | 4,083 | 1,004 | 421 | 359 | 318 | 276 |
| years (jobs) | | | | | | | |

Table 18: E+ scenario - IMPACTS - Jobs (continued)

| Item 2020 2025 2030 2035 2040 | 0075 | |
|--|----------|-----------|
| | 2045 | 2050 |
| On-the-Job Training - Coal sector - None 3,439 897 504 443 | 403 | 361 |
| (jobs) | | |
| On-the-Job Training - Coal sector - Over 468 127 70.2 62.7 | 58 | 53 |
| 10 years (jobs) | | |
| On-the-Job Training - Coal sector - Up to 1 47,816 13,261 7,946 6,876 | 6,164 | 5,442 |
| year (jobs) | 0,.0 . | 0, |
| | 367,956 | 455,329 |
| years (jobs) | 301,730 | 400,027 |
| | 125,497 | 155,428 |
| | 123,471 | 133,426 |
| years (jobs) | 70.500 | 00.077 |
| On-the-Job Training - Grid sector - None 26,716 35,237 54,865 68,427 | 79,528 | 98,244 |
| (jobs) | | |
| On-the-Job Training - Grid sector - Over 4,375 5,789 9,042 11,312 | 13,187 | 16,339 |
| 10 years (jobs) | | |
| On-the-Job Training - Grid sector - Up to 1 350,498 462,751 721,208 900,283 1, | ,047,242 | 1,294,736 |
| year (jobs) | | |
| On-the-Job Training - Natural gas sector - 124,350 100,227 81,565 72,994 | 51,383 | 36,361 |
| 1 to 4 years (jobs) | | |
| On-the-Job Training - Natural gas sector - 39,977 32,555 26,896 24,586 | 17,510 | 12,595 |
| 4 to 10 years (jobs) | , | ,070 |
| On-the-Job Training - Natural gas sector - 29,256 23,161 18,408 15,980 | 11,043 | 7,637 |
| None (jobs) | 11,040 | 1,001 |
| | 0.070 | 1 / 07 |
| On-the-Job Training - Natural gas sector - 5,326 4,263 3,418 2,974 | 2,062 | 1,437 |
| Over 10 years (jobs) | | |
| | 142,536 | 99,137 |
| Up to 1 year (jobs) | | |
| On-the-Job Training - Nuclear sector - 1 to 9,695 9,399 9,444 7,206 | 7,018 | 10,337 |
| 4 years (jobs) | | |
| On-the-Job Training - Nuclear sector - 4 2,338 2,267 2,278 1,739 | 1,694 | 2,495 |
| to 10 years (jobs) | | |
| On-the-Job Training - Nuclear sector - 3,363 3,256 3,267 2,489 | 2,420 | 3,560 |
| None (jobs) | 2, 120 | 0,000 |
| On-the-Job Training - Nuclear sector - 521 506 508 388 | 378 | 558 |
| Over 10 years (jobs) | 310 | 330 |
| | 24,588 | 2/1// |
| | 24,566 | 36,166 |
| to 1 year (jobs) | F0 700 | 07.040 |
| On-the-Job Training - Oil sector - 1 to 4 144,006 126,810 109,359 79,265 | 58,730 | 37,263 |
| years (jobs) | | |
| On-the-Job Training - Oil sector - 4 to 10 34,011 30,239 26,292 19,275 | 14,437 | 9,286 |
| years (jobs) | | |
| On-the-Job Training - Oil sector - None 48,070 41,572 35,156 25,044 | 18,229 | 11,385 |
| (iobs) | | |
| On-the-Job Training - Oil sector - Over 10 7,713 6,796 5,864 4,255 | 3,156 | 2,007 |
| years (jobs) | 0,.00 | _,~~. |
| | 224,385 | 142,002 |
| year (jobs) | 224,000 | 142,002 |
| | 01/ 0/1 | 070.707 |
| | 216,861 | 279,704 |
| to 4 years (jobs) | | 00.000 |
| On-the-Job Training - Solar PV sector - 4 29,617 40,781 53,887 58,122 | 63,247 | 82,980 |
| to 10 years (jobs) | | |
| On-the-Job Training - Solar PV sector - 29,164 41,562 54,814 57,873 | 62,565 | 81,744 |
| None (jobs) | | |
| On-the-Job Training - Solar PV sector - 6,568 9,287 11,937 12,111 | 12,638 | 15,909 |
| Over 10 years (jobs) | | |
| | 713,493 | 920,067 |
| to 1 year (jobs) | . 10,470 | , 23,001 |
| | 176,746 | 216,748 |
| | 110,140 | 210,140 |
| years (jobs) | E0 070 | /F /01 |
| On-the-Job Training - Wind sector - 4 to 15,317 26,234 37,266 46,677 | 53,872 | 65,621 |
| 10 years (jobs) | | |

Table 18: E+ scenario - IMPACTS - Jobs (continued)

| Table 18: E+ scenario - IMPACTS - Jobs (co | ontinuedJ | | | | | | |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-the-Job Training - Wind sector - None | | 15,682 | 27,018 | 37,554 | 44,665 | 49,391 | 60,924 |
| (jobs) | | | | | | | |
| On-the-Job Training - Wind sector - Over | | 3,460 | 5,871 | 7,904 | 8,886 | 9,264 | 11,243 |
| 10 years (jobs) | | | | | | | |
| On-the-Job Training - Wind sector - Up to | | 193,505 | 332,624 | 457,289 | 531,964 | 576,113 | 710,673 |
| 1 year (jobs) | | | | , | 22.7.2 | | , |
| Related work experience - All sectors - 1 | | 1,056,537 | 1,195,884 | 1,417,749 | 1,483,718 | 1,555,896 | 1,852,919 |
| to 4 years (jobs) | | 1,000,001 | 1,170,004 | 1,411,142 | 1,400,110 | 1,000,070 | 1,002,717 |
| Related work experience - All sectors - 4 | | 673,659 | 766,235 | 911,390 | 958,053 | 1,006,857 | 1,200,224 |
| to 10 years (jobs) | | 013,037 | 100,233 | 911,390 | 930,033 | 1,000,031 | 1,200,224 |
| | | / 11 110 | /71 000 | F/0 /00 | E00 E / / | (00.700 | 7/ 5 500 |
| Related work experience - All sectors - | | 411,112 | 471,328 | 563,632 | 592,544 | 622,780 | 745,590 |
| None (jobs) | | 10 (000 | 040 / 00 | 050 570 | 050 077 | 0/0455 | 040.055 |
| Related work experience - All sectors - | | 186,998 | 212,488 | 250,578 | 259,277 | 269,155 | 319,055 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - Up | | 577,730 | 669,027 | 801,666 | 835,456 | 873,438 | 1,048,434 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 24,915 | 28,344 | 34,009 | 35,192 | 46,257 | 71,775 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 13,033 | 14,336 | 17,291 | 18,283 | 25,407 | 40,776 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 14,115 | 15,813 | 18,262 | 17,227 | 20,285 | 30,827 |
| - None (jobs) | | | , | , | , | | , |
| Related work experience - Biomass sector | | 3,589 | 3,882 | 4,597 | 4,707 | 6,438 | 10,462 |
| - Over 10 years (jobs) | | 0,007 | 0,002 | 4,071 | 4,101 | 0,400 | 10,402 |
| Related work experience - Biomass sector | | 27,797 | 30,938 | 35,014 | 31,422 | 34,666 | 52,391 |
| = | | 21,171 | 30,736 | 33,014 | 31,422 | 34,000 | 32,371 |
| - Up to 1 year (jobs) | | 1 (00 | 00.757 | 10.500 | 0.07/ | 1/ 177 | 0/ /00 |
| Related work experience - CO2 sector - 1 | | 1,623 | 22,754 | 19,583 | 9,276 | 14,177 | 26,608 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - 4 | | 1,115 | 15,808 | 13,544 | 6,363 | 9,727 | 18,419 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 691 | 9,938 | 8,464 | 3,932 | 6,012 | 11,526 |
| None (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 279 | 3,841 | 3,332 | 1,602 | 2,448 | 4,521 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 808 | 11,516 | 9,888 | 4,649 | 7,127 | 13,574 |
| Up to 1 year (jobs) | | | , | , | • | | , |
| Related work experience - Coal sector - 1 | | 26,408 | 7,201 | 4,147 | 3,581 | 3,203 | 2,820 |
| to 4 years (jobs) | | | ., | ',' '. | 0,00. | 0,200 | _,0_0 |
| Related work experience - Coal sector - 4 | | 15,512 | 3,989 | 2,039 | 1,786 | 1,621 | 1,448 |
| to 10 years (jobs) | | 10,012 | 3,707 | 2,007 | 1,100 | 1,021 | 1,440 |
| Related work experience - Coal sector - | | 9,454 | 2,500 | 1,349 | 1,167 | 1,046 | 923 |
| | | 9,454 | 2,500 | 1,349 | 1,107 | 1,046 | 923 |
| None (jobs) | | 0.047 | 10/5 | 5.0 | | / 54 | |
| Related work experience - Coal sector - | | 3,917 | 1,045 | 562 | 495 | 451 | 405 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Coal sector - | | 14,320 | 4,221 | 2,746 | 2,355 | 2,091 | 1,829 |
| Up to 1 year (jobs) | | | | | | | |
| Related work experience - Grid sector - 1 | | 197,397 | 260,515 | 405,854 | 506,416 | 588,827 | 727,660 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - Grid sector - 4 | | 129,361 | 170,600 | 265,580 | 331,138 | 384,737 | 475,090 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - Grid sector - | | 81,081 | 107,171 | 167,209 | 208,939 | 243,276 | 301,036 |
| None (jobs) | | 0.,001 | .5., | ,, | _50,,0, | 5,2.5 | -5.,555 |
| Related work experience - Grid sector - | | 33,530 | 44,244 | 68,915 | 85,976 | 99,950 | 123,496 |
| Over 10 years (jobs) | | 33,330 | 77,244 | 00,710 | 33,710 | 77,700 | 120,770 |
| | | 10/ E00 | 120 /70 | 014 555 | 071.057 | 21/ / 20 | 392,794 |
| Related work experience - Grid sector - | | 104,522 | 138,472 | 216,555 | 271,256 | 316,620 | 372,174 |
| Up to 1 year (jobs) | | 00/00/ | 1/50/0 | 100.077 | 110.070 | 00 / 07 | F7 F07 |
| Related work experience - Natural gas | | 206,984 | 165,949 | 133,846 | 118,069 | 82,427 | 57,537 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Natural gas | | 137,737 | 110,541 | 89,428 | 79,407 | 55,625 | 39,032 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| | | | | | | | |

Table 18: E+ scenario - IMPACTS - Jobs (continued)

| Table 10. E+ Scellul 10 - IMPACTS - Jubs (Cul | ıtınueuj | | | | | | |
|--|----------|----------|----------|----------|---------|---------|----------------------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Related work experience - Natural gas | | 81,233 | 65,487 | 53,255 | 47,552 | 33,439 | 23,590 |
| sector - None (jobs) | | | | | | | |
| Related work experience - Natural gas | | 37,380 | 29,816 | 23,850 | 20,763 | 14,387 | 9,952 |
| sector - Over 10 years (jobs) | | | | | | | |
| Related work experience - Natural gas | | 97,562 | 78,199 | 63,010 | 55,428 | 38,657 | 27,056 |
| sector - Up to 1 year (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 18,691 | 18,095 | 18,157 | 13,835 | 13,456 | 19,792 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 12,126 | 11,737 | 11,774 | 8,970 | 8,722 | 12,828 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 6,312 | 6,119 | 6,149 | 4,692 | 4,569 | 6,729 |
| - None (jobs) | | 0.700 | 0.715 | 0.700 | 0.7/7 | 0.400 | 0.070 |
| Related work experience - Nuclear sector | | 3,733 | 3,615 | 3,629 | 2,767 | 2,692 | 3,962 |
| - Over 10 years (jobs) | | 0.015 | 0.000 | 0.040 | (0 / 0 | ((50 | 0.007 |
| Related work experience - Nuclear sector | | 9,215 | 8,930 | 8,969 | 6,840 | 6,659 | 9,804 |
| - Up to 1 year (jobs) Related work experience - Oil sector - 1 to | | 201.005 | 0// 500 | 007.57/ | 164,533 | 101 570 | 7/ 070 |
| · | | 301,085 | 264,533 | 227,574 | 164,533 | 121,573 | 76,878 |
| 4 years (jobs) | | 100 / 01 | 1/0.050 | 107 / FO | 00.220 | 70.07/ | / _/ / 0E0 |
| 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 - | | 106,469 | 93,826 | 80,891 | 58,779 | 43,645 | 27,806 |
| None (jobs) | | 100,409 | 93,020 | 00,091 | 30,119 | 43,645 | 21,000 |
| Related work experience - Oil sector - | | 52,541 | 46,027 | 39,527 | 28,483 | 20,992 | 13,227 |
| Over 10 years (jobs) | | 52,541 | 40,021 | 39,321 | 20,403 | 20,992 | 13,221 |
| Related work experience - Oil sector - Up | | 147,302 | 129,295 | 110,972 | 80,355 | 59,452 | 37,782 |
| to 1 year (jobs) | | 141,302 | 127,270 | 110,712 | 00,333 | 37,432 | 31,102 |
| Related work experience - Solar PV sector | | 178,700 | 255,062 | 334,418 | 349,336 | 374,646 | 485,644 |
| - 1 to 4 years (jobs) | | 110,100 | 200,002 | 334,410 | 047,000 | 314,040 | 400,044 |
| Related work experience - Solar PV sector | | 115,524 | 164,399 | 215,113 | 224,295 | 239,948 | 310,167 |
| - 4 to 10 years (jobs) | | , | .0 .,077 | 2.07.10 | ,_, | 2077 | 0.07.0. |
| Related work experience - Solar PV sector | | 72,936 | 103,860 | 136,243 | 142,633 | 153,161 | 198,797 |
| - None (jobs) | | ,, | .00,000 | .00,2 .0 | ,000 | .00,.0. | ., 0,.,. |
| Related work experience - Solar PV sector | | 32,853 | 47,093 | 61,102 | 62,541 | 66,045 | 84,286 |
| - Over 10 years (jobs) | | | , | , | • | | • |
| Related work experience - Solar PV sector | | 115,793 | 164,330 | 213,855 | 221,249 | 235,003 | 301,512 |
| - Up to 1 year (jobs) | | | | | • | | |
| Related work experience - Wind sector - 1 | | 100,735 | 173,429 | 240,161 | 283,481 | 311,331 | 384,205 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - Wind sector - 4 | | 66,560 | 114,576 | 158,967 | 188,472 | 207,796 | 256,214 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 38,823 | 66,614 | 91,811 | 107,623 | 117,347 | 144,355 |
| None (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 19,175 | 32,926 | 45,063 | 51,945 | 55,750 | 68,743 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 60,410 | 103,126 | 140,658 | 161,902 | 173,162 | 211,692 |
| Up to 1 year (jobs) | | | | | | | |
| 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) | | 34,140 | 45,693 | 72,222 | 91,465 | 107,985 | 135,551 |
| Wage income - Natural Gas (million \$2019) | | 37,156 | 30,199 | 24,654 | 21,962 | 15,520 | 10,956 |
| Wage income - Nuclear (million \$2019) | | 3,580 | 3,549 | 3,650 | 2,851 | 2,845 | 4,295 |
| Wage income - Oil (million \$2019) | | 52,015 | 46,299 | 40,361 | 29,538 | 22,095 | 14,135 |
| Wage income - Solar (million \$2019) | | 28,585 | 41,214 | 54,747 | 58,067 | 63,225 | 83,270 |
| Wage income - Wind (million \$2019) | | 16,622 | 29,014 | 40,912 | 49,452 | 55,644 | 69,778 |
| | | | | | | | |

Table 19: E-scenario - PILLAR 1: Efficiency/Electrification - Commercial

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

Table 20: E- scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

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

Table 21: E- scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| Final energy use - Residential (PJ) | 11,788 | 11,126 | 10,656 | 10,151 | 9,457 | 8,609 | 7,786 |
| Final energy use - Transportation (PJ) | 28,030 | 26,603 | 24,463 | 22,703 | 21,315 | 19,677 | 17,739 |

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

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

Table 23: E- scenario - PILLAR 1: Efficiency/Electrification - Transportation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|--------|--------|---------|---------|
| Light-duty vehicle capital costs - | | 0 | 8,683 | 17,455 | 59,707 | 185,491 | 271,068 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Public EV charging plugs - DC Fast (1000 | 14.4 | | 31.9 | | 147 | | 402 |
| units) | | | | | | | |
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 766 | | 3,537 | | 9,670 |
| 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 |
| Vehicle sales - Light-duty - diesel (%) | 1.39 | 1.82 | 2.03 | 1.61 | 1.02 | 0.519 | 0.223 |
| 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 - 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 - diesel (%) | 64.8 | 62.2 | 57.7 | 49.4 | 35.6 | 19.6 | 8.37 |
| 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 - hydrogen | 0.166 | 0.485 | 1.37 | 3.58 | 7.86 | 13.2 | 17 |
| FC (%) | | | | | | | |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.266 | 0.279 | 0.286 | 0.258 | 0.184 | 0.102 |

Table 24: E- scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---------|---------|---------|---------|---------|-----------|-----------|
| Capital invested - Biomass power plant | 0 | 0.001 | 0.009 | 0 | 0 | 0 | 0.012 |
| (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu allam | 0 | 0 | 0 | 0.477 | 0.303 | 0.322 | 0.134 |
| power plant (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu power | 0 | 0 | 65.9 | 57.4 | 23.9 | 0.913 | 0.238 |
| plant (billion \$2018) | | | | | | | |
| 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 - 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 - Coal (MW) | 215,962 | 59,668 | 162 | 122 | 55.9 | 42 | 34.5 |
| Installed - Ct (MW) | 146,430 | 140,119 | 132,908 | 111,206 | 98,767 | 148,426 | 241,143 |
| Installed - Geothermal (MW) | 2,393 | 2,397 | 2,422 | 2,418 | 2,427 | 2,437 | 2,450 |
| Installed - Grid battery storage (MW) | | 989 | 3,715 | 13,014 | 37,934 | 87,773 | 142,016 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Nuclear (MW) | 98,481 | 95,135 | 93,041 | 82,240 | 81,173 | 73,631 | 70,690 |
| Installed - Offshore wind (MW) | 29.3 | 1,001 | 5,040 | 13,607 | 38,613 | 103,767 | 217,041 |
| Installed - Onshore wind (MW) | 97,778 | 190,523 | 360,186 | 535,006 | 755,512 | 1,070,110 | 1,512,260 |
| Installed - Other (MW) | 68,061 | 57,347 | 55,269 | 53,804 | 51,795 | 50,874 | 49,607 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |
| 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 |

Table 25: E- scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|-------|------|--------|-------|-------|-------|-------|
| Biomass (TWh) | 19.1 | 23.2 | 39.7 | 22.2 | 3.11 | 0.406 | 0.051 |
| Biomass power plant (GWh) | 3,564 | 883 | 10,475 | 3,401 | 1,584 | 157 | 35 |
| Biomass w cc (TWh) | 0 | 0 | 73.9 | 139 | 163 | 165 | 149 |
| Biomass w/ccu allam power plant (GWh) | 0 | 0 | 0 | 391 | 668 | 983 | 1,033 |

Table 25: E- scenario - PILLAR 2: Clean Electricity - Generation (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------|-------|-------|--------|---------|---------|---------|---------|
| Biomass w/ccu power plant (GWh) | 0 | 0 | 73,933 | 138,288 | 161,856 | 164,137 | 147,859 |
| Coal (TWh) | 979 | 260 | 0.568 | 0.427 | 0.196 | 0.147 | 0.121 |
| 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 |
| Geothermal (TWh) | 14.5 | 14.5 | 14.2 | 14.1 | 13.4 | 13.4 | 13.2 |
| Hydro (TWh) | 300 | 312 | 295 | 294 | 300 | 291 | 292 |
| Nuclear (TWh) | 802 | 775 | 759 | 671 | 664 | 603 | 580 |
| Offshore wind (TWh) | 0.092 | 3.66 | 20.4 | 66.3 | 168 | 454 | 902 |
| Onshore wind (TWh) | 412 | 780 | 1,497 | 2,111 | 2,909 | 4,105 | 5,840 |
| 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 |

Table 26: E- scenario - PILLAR 3: Clean fuels - Bioenergy

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

Table 27: E- scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|----------|
| Carbon sink potential - Aggressive deployment - Corn-ethanol to energy | | | | | | | -23,286 |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -203,503 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -7,391 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -234,180 |
| deployment - Total (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -23,286 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -106,430 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -3,696 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -133,412 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 11,287 |
| Aggressive deployment - Corn-ethanol to | | | | | | | |
| energy grasses (1000 hectares) | | | | | | | |

Table 27: E- scenario - PILLAR 6: Land sinks - Agriculture (continued)

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

Table 28: E- scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - High - Accelerate | | | | | | | -48,900 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - All (not | | | | | | | - |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1,535,900 |
| Carbon sink potential - High - Avoid | | | | | | | -84,000 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Extend | | | | | | | -302,000 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Improve | | | | | | | -57,000 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | - |
| retention of HWP (1000 tCO2e/y) | | | | | | | 300,000 |
| Carbon sink potential - High - Increase | | | | | | | -60,000 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -242,000 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | - |
| pasture (1000 tCO2e/y) | | | | | | | 264,000 |
| Carbon sink potential - High - Restore | | | | | | | -178,000 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Accelerate | | | | | | | -24,500 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - All (not | | | | | | | - |
| counting overlap) (1000 tCO2e/y) | | | | | | | 505,500 |
| Carbon sink potential - Low - Avoid | | | | | | | -14,000 |
| deforestation (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Low - Extend | | | | | | | -116,000 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Improve | | | | | | | -29,000 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -100,000 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -21,000 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -121,000 |
| cropland (1000 tCO2e/y) | | | | | | | |

Table 28: E- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 205 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Low - Reforest | | | | | | | -20,00 |
| pasture (1000 tC02e/y) | | | | | | | (0.00 |
| Carbon sink potential - Low - Restore | | | | | | | -60,00 |
| productivity (1000 tCO2e/y) | | | | | | | 0 / 70 |
| Carbon sink potential - Mid - Accelerate | | | | | | | -36,70 |
| regeneration (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Mid - All (not | | | | | | | |
| counting overlap) (1000 tC02e/y) | | | | | | | 1,020,20 |
| Carbon sink potential - Mid - Avoid | | | | | | | -49,00 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Extend | | | | | | | -209,00 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Improve | | | | | | | -42,50 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | |
| retention of HWP (1000 tCO2e/y) | | | | | | | 200,00 |
| Carbon sink potential - Mid - Increase | | | | | | | -40,50 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -181,50 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -142,00 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Restore | | | | | | | -119,00 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 8,00 |
| High - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 11,37 |
| High - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 154,00 |
| High - Extend rotation length (1000 | | | | | | | , , , , |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 21,00 |
| High - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | |
| High - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 5,70 |
| High - Increase trees outside forests | | | | | | | 0,.0 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 16,00 |
| High - Reforest cropland (1000 hectares) | | | | | | | .5,50 |
| Land impacted for carbon sink potential - | - | | | + | | | 7,50 |
| High - Reforest pasture (1000 hectares) | | | | | | | 1,00 |
| Land impacted for carbon sink potential - | | | | | | | 59,00 |
| High - Restore productivity (1000 | | | | | | | 37,00 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 282,57 |
| High - Total impacted (over 30 years) | | | | | | | 202,01 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 4,00 |
| Low - Accelerate regeneration (1000 | | | | | | | 4,00 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 10,67 |
| Low - Avoid deforestation (over 30 years) | | | | | | | 10,67 |
| (1000 hectares) | | | | | | | |
| 7 | | | | | | | E0.00 |
| Land impacted for carbon sink potential - | | | | | | | 59,00 |
| Low - Extend rotation length (1000 | | | | | | | |

Table 28: E- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - | | | | | | | 10,500 |
| Low - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| Low - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,000 |
| Low - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 8,000 |
| Low - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,300 |
| Low - Reforest pasture (1000 hectares) | | | | | | | , |
| Land impacted for carbon sink potential - | | | | | | | 35,700 |
| Low - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 132,177 |
| Low - Total impacted (over 30 years) | | | | | | | 102,111 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 6,000 |
| Mid - Accelerate regeneration (1000 | | | | | | | 0,000 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 11,025 |
| Mid - Avoid deforestation (over 30 years) | | | | | | | 11,023 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 106,500 |
| Mid - Extend rotation length (1000 | | | | | | | 100,000 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 15,800 |
| Mid - Improve plantations (1000 hectares) | | | | | | | 13,000 |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| Mid - Increase retention of HWP (1000 | | | | | | | U |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 4,350 |
| Mid - Increase trees outside forests (1000 | | | | | | | 4,330 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 12,000 |
| Mid - Reforest cropland (1000 hectares) | | | | | | | 12,000 |
| Land impacted for carbon sink potential - | | | | | | | 0 / 00 |
| • | | | | | | | 9,400 |
| Mid - Reforest pasture (1000 hectares) | | | | | | | 71.000 |
| Land impacted for carbon sink potential - | | | | | | | 71,900 |
| Mid - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | 00/075 |
| Land impacted for carbon sink potential - | | | | | | | 236,975 |
| Mid - Total impacted (over 30 years) (1000 | | | | | | | |
| hectares) | | | | | | | |

Table 29: E- 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 30: E- scenario - IMPACTS - Fossil fuel industries

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

Table 30: E- scenario - IMPACTS - Fossil fuel industries (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|-------|-------|---------|
| Oil consumption - Cumulative (million | | | | | | | 151,515 |
| bbls) | | | | | | | |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 5,074 | 4,832 | 3,313 |
| Oil production - Cumulative (million bbls) | | | | | | | 151,997 |

Table 31: E- scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|---------|---------|---------|--------|--------|--------|
| Monetary damages from air pollution - | | 22,661 | 29.5 | 28.3 | 24.2 | 16.6 | 1.24 |
| Coal (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 12,934 | 7,464 | 3,616 | 1,603 | 552 | 382 |
| Natural Gas (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 104,258 | 107,043 | 105,711 | 96,553 | 77,882 | 54,050 |
| Transportation (million 2019\$) | | | | | | | |
| Premature deaths from air pollution - | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Coal (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1,460 | 843 | 408 | 181 | 62.3 | 43.1 |
| Natural Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 11,726 | 12,039 | 11,890 | 10,859 | 8,759 | 6,079 |
| Transportation (deaths) | | | | | | | |

Table 32: 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) | | 581,151 | 740,531 | 848,062 | 963,235 | 1,231,236 | 1,521,901 |
| By economic sector - Manufacturing | | 643,588 | 841,653 | 842,392 | 846,575 | 1,022,744 | 1,121,180 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 459,533 | 349,848 | 267,959 | 202,834 | 155,840 | 95,673 |
| By economic sector - Other (jobs) | | 56,713 | 82,057 | 105,315 | 133,287 | 185,287 | 253,398 |
| By economic sector - Pipeline (jobs) | | 46,559 | 52,128 | 44,106 | 34,087 | 32,405 | 32,455 |
| By economic sector - Professional (jobs) | | 329,757 | 396,268 | 484,820 | 601,655 | 769,834 | 955,468 |
| By economic sector - Trade (jobs) | | 299,111 | 313,315 | 344,813 | 391,852 | 480,920 | 587,900 |
| By economic sector - Utilities (jobs) | | 467,151 | 555,052 | 647,545 | 754,638 | 1,013,321 | 1,274,330 |
| By education level - All sectors - | | 877,317 | 1,032,448 | 1,120,830 | 1,235,677 | 1,554,721 | 1,876,871 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - All sectors - | | 644,556 | 719,700 | 766,180 | 835,715 | 1,022,709 | 1,204,395 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - All sectors - Doctoral | | 21,371 | 23,756 | 26,444 | 30,321 | 37,262 | 44,622 |
| degree (jobs) | | | | | | | |
| By education level - All sectors - High | | 1,221,244 | 1,428,512 | 1,544,246 | 1,678,342 | 2,074,673 | 2,464,577 |
| school diploma or less (jobs) | | | | | | | |
| By education level - All sectors - Masters | | 151,747 | 168,698 | 182,837 | 203,411 | 250,853 | 299,109 |
| or professional degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 16,251 | 19,569 | 31,894 | 45,570 | 47,098 | 45,477 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Biomass sector - | | 14,930 | 17,672 | 29,620 | 45,296 | 48,357 | 46,565 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 736 | 920 | 1,676 | 2,768 | 3,070 | 2,979 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Biomass sector - High | | 49,010 | 59,413 | 84,349 | 99,696 | 94,444 | 90,761 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Biomass sector - | | 4,115 | 5,002 | 8,479 | 13,078 | 14,098 | 13,643 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - CO2 sector - | | 2,515 | 38,458 | 32,848 | 15,318 | 23,219 | 44,587 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - CO2 sector - | | 1,259 | 18,272 | 16,339 | 8,256 | 12,395 | 21,828 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - CO2 sector - Doctoral | | 25.6 | 334 | 332 | 195 | 289 | 436 |
| degree (jobs) | | | | | | | |

Table 32: E- scenario - IMPACTS - Jobs (continued)

| Table 32: E- scenario - IMPACTS - Jobs (coi | шиши | | | | | | |
|--|------|---------|---------|---------|---------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By education level - CO2 sector - High | | 3,107 | 47,531 | 40,756 | 19,094 | 28,995 | 55,693 |
| school diploma or less (jobs) | | | | | | | |
| By education level - CO2 sector - Masters | | 281 | 4,019 | 3,644 | 1,884 | 2,820 | 4,839 |
| or professional degree (jobs) | | | | | | | |
| By education level - Coal sector - | | 22,072 | 6,164 | 2,995 | 2,610 | 2,316 | 1,994 |
| Associates degree or some college (jobs) | | ,- | -, - | , - | , | , | , |
| By education level - Coal sector - | | 14,426 | 3,788 | 1,704 | 1,536 | 1,407 | 1,249 |
| Bachelors degree (jobs) | | 14,420 | 0,100 | 1,104 | 1,000 | 1,401 | 1,2-17 |
| By education level - Coal sector - Doctoral | | 527 | 139 | 51.8 | 48.4 | 45.9 | 42.2 |
| degree (jobs) | | 321 | 137 | 31.0 | 40.4 | 43.7 | 42.2 |
| By education level - Coal sector - High | | 31,106 | 9,425 | 5,799 | 4,961 | 4,315 | 3,636 |
| | | 31,106 | 9,425 | 5,199 | 4,961 | 4,315 | 3,030 |
| school diploma or less (jobs) | | 0.570 | 007 | 070 | 000 | 010 | 070 |
| By education level - Coal sector - Masters | | 3,542 | 934 | 372 | 338 | 312 | 279 |
| or professional degree (jobs) | | | | | | | |
| By education level - Grid sector - | | 173,353 | 228,027 | 308,713 | 396,350 | 576,086 | 740,915 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Grid sector - | | 99,341 | 129,819 | 174,626 | 222,780 | 321,789 | 411,323 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Grid sector - Doctoral | | 2,864 | 3,680 | 4,867 | 6,104 | 8,668 | 10,894 |
| degree (jobs) | | | | | | | |
| By education level - Grid sector - High | | 221,673 | 293,057 | 398,748 | 514,506 | 751,549 | 971,380 |
| school diploma or less (jobs) | | , | -, | , | , | | , |
| By education level - Grid sector - Masters | | 24,997 | 32,564 | 43,669 | 55,542 | 79,987 | 101,940 |
| or professional degree (jobs) | | 24,771 | 32,304 | 43,007 | 33,342 | 17,701 | 101,740 |
| By education level - Natural gas sector - | | 177,428 | 132,902 | 100,712 | 86,735 | 70,072 | 57,130 |
| | | 111,420 | 132,902 | 100,712 | 00,133 | 10,012 | 51,150 |
| Associates degree or some college (jobs) | | 100 (00 | 00.750 | // 0/0 | F / 000 | / 0 440 | 04.000 |
| By education level - Natural gas sector - | | 123,689 | 90,752 | 66,362 | 54,800 | 43,112 | 34,393 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 4,108 | 2,986 | 2,148 | 1,737 | 1,341 | 1,055 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 217,308 | 162,916 | 122,486 | 104,023 | 83,752 | 67,883 |
| High school diploma or less (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 30,288 | 22,094 | 16,086 | 13,254 | 10,379 | 8,263 |
| Masters or professional degree (jobs) | | | | • | | | · |
| By education level - Nuclear sector - | | 13,677 | 15,250 | 15,745 | 15,139 | 13,819 | 12,177 |
| Associates degree or some college (jobs) | | .0,0.1 | 10,200 | 10,1 10 | 10,107 | 10,017 | , |
| By education level - Nuclear sector - | | 14,784 | 16,445 | 16,939 | 16,249 | 14,798 | 13,010 |
| Bachelors degree (jobs) | | 14,104 | 10,443 | 10,737 | 10,247 | 14,1 70 | 13,010 |
| | | (/0 | 71/ | 700 | /00 | /00 | |
| By education level - Nuclear sector - | | 648 | 716 | 733 | 699 | 633 | 553 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Nuclear sector - High | | 16,977 | 18,981 | 19,648 | 18,941 | 17,332 | 15,311 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 4,002 | 4,444 | 4,569 | 4,376 | 3,978 | 3,492 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - Oil sector - Associates | | 206,241 | 184,787 | 166,010 | 145,737 | 125,155 | 81,627 |
| degree or some college (jobs) | | | | | | | |
| By education level - Oil sector - Bachelors | | 212,702 | 187,569 | 165,668 | 142,894 | 120,528 | 76,911 |
| degree (jobs) | | , | , | , | , | , | |
| By education level - Oil sector - Doctoral | | 6,871 | 6,092 | 5,410 | 4,694 | 3,983 | 2,552 |
| degree (jobs) | | 0,011 | 0,072 | 0,410 | 4,074 | 0,700 | 2,002 |
| By education level - Oil sector - High | + | 318,831 | 287,355 | 259,739 | 229,389 | 198,127 | 130,297 |
| | | 310,031 | 201,333 | 207,107 | 227,387 | 170,121 | 130,277 |
| school diploma or less (jobs) | | / 0.00/ | 10.000 | 07.000 | 01.007 | 07.700 | 1/ 070 |
| By education level - Oil sector - Masters or | | 48,234 | 42,333 | 37,202 | 31,924 | 26,788 | 16,973 |
| professional degree (jobs) | | | | | | | |
| By education level - Solar PV sector - | T | 171,543 | 245,159 | 261,046 | 283,736 | 371,089 | 450,507 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Solar PV sector - | | 99,886 | 144,608 | 154,725 | 169,434 | 224,069 | 274,121 |
| Bachelors degree (jobs) | | | | | | | |
| | | 0.1/7 | 4,544 | 5,240 | 6,063 | 8,065 | 10,514 |
| By education level - Solar PV sector - | 1 | 3,167 | 4.544 | D.Z4U | อ.บท.ว | อ.บทว | 10.514 |

Table 32: E- scenario - IMPACTS - Jobs (continued)

| Table 32: E- scenario - IMPACTS - Jobs (co | ontinuedJ | | | | | | |
|---|-----------|---------|---------|---------|-----------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By education level - Solar PV sector - High | | 240,887 | 341,586 | 360,137 | 387,232 | 501,802 | 601,052 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Solar PV sector - | | 21,498 | 31,168 | 34,439 | 38,712 | 51,558 | 65,067 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - Wind sector - | ļ | 94,236 | 162,133 | 200,866 | 244,482 | 325,867 | 442,456 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Wind sector - | | 63,539 | 110,775 | 140,196 | 174,471 | 236,253 | 324,995 |
| Bachelors degree (jobs) | | 2 (2) | | | | | 1= === |
| By education level - Wind sector - | | 2,424 | 4,346 | 5,986 | 8,014 | 11,167 | 15,597 |
| Doctoral degree (jobs) | | 100.077 | 000.017 | 050 505 | 000 500 | 00/ 050 | 500 577 |
| By education level - Wind sector - High | ļ | 122,346 | 208,247 | 252,585 | 300,502 | 394,358 | 528,566 |
| school diploma or less (jobs) By education level - Wind sector - Masters | | 14,791 | 07.171 | 07.077 | 44,303 | / O 001 | 07 710 |
| or professional degree (jobs) | ļ | 14,791 | 26,141 | 34,377 | 44,303 | 60,931 | 84,613 |
| By resource sector - Biomass (jobs) | | 85,042 | 102,575 | 156,018 | 206,408 | 207,068 | 199,424 |
| By resource sector - CO2 (jobs) | | 7,188 | 102,575 | 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 - Goal (jobs) | | 522,228 | 687,148 | 930,623 | 1,195,282 | 1,738,078 | 2,236,452 |
| By resource sector - Grid (jobs) By resource sector - Natural Gas (jobs) | | 552,821 | 411,650 | 307,795 | 260,549 | 208,657 | 168,724 |
| | | 50,088 | 55,836 | 57,634 | 55,404 | 50,559 | 44,544 |
| By resource sector - Nuclear (jobs) By resource sector - Oil (jobs) | | 792,878 | 708,136 | 634,028 | | 474,581 | 308,359 |
| By resource sector - Oil (Jobs) | | 536,980 | | | 554,637 | | 1,401,261 |
| By resource sector - Solar (Jobs) | | | 767,065 | 815,587 | 885,178 | 1,156,584 | |
| | | 297,337 | 511,641 | 634,011 | 771,770 | 1,028,576 | 1,396,226 |
| Median wages - Annual - Biomass (\$2019 | ļ | 51,978 | 53,602 | 56,740 | 60,498 | 62,984 | 64,202 |
| per job) | | (0.505 | (0.700 | (/ 000 | // 000 | /7.00F | // 070 |
| Median wages - Annual - CO2 (\$2019 per job) | ļ | 62,505 | 62,790 | 64,228 | 66,288 | 67,225 | 66,970 |
| Median wages - Annual - Coal (\$2019 per | | 60,563 | 59,804 | 55,633 | 56,515 | 57,451 | 58,453 |
| job) | ļ | 60,363 | 39,004 | 33,633 | 56,515 | 57,451 | 30,433 |
| Median wages - Annual - Grid (\$2019 per | | 62,539 | 63,375 | 64,248 | 65,159 | 66,110 | 67,102 |
| job) | | 62,539 | 63,313 | 04,240 | 65,139 | 66,110 | 67,102 |
| Median wages - Annual - Natural Gas | | 66,265 | 67,136 | 67,771 | 68,258 | 68,978 | 69,760 |
| (\$2019 per job) | ļ | 00,200 | 01,130 | 01,111 | 00,230 | 00,710 | 07,100 |
| Median wages - Annual - Nuclear (\$2019 | | 71,486 | 73,188 | 74,974 | 76,846 | 78,808 | 80,864 |
| per job) | | 11,400 | 13,100 | 14,714 | 10,040 | 10,000 | 00,004 |
| Median wages - Annual - Oil (\$2019 per | | 65,828 | 66,678 | 67,513 | 68,348 | 69,194 | 69,918 |
| job) | ļ | 00,020 | 00,010 | 01,010 | 00,040 | 07,174 | 07,710 |
| Median wages - Annual - Solar (\$2019 per | | 55,399 | 56,082 | 57,093 | 58,129 | 59,038 | 60,292 |
| job) | ļ | 00,077 | 00,002 | 01,070 | 00,127 | 07,000 | 00,272 |
| Median wages - Annual - Wind (\$2019 per | | 58,122 | 59,113 | 60,675 | 62,325 | 63,655 | 64,920 |
| job) | ļ | 30,122 | 07,110 | 00,010 | 02,020 | 00,000 | 04,720 |
| On-Site or In-Plant Training - Biomass | | 8,583 | 10,499 | 16,845 | 23,383 | 23,942 | 23,154 |
| sector - 1 to 4 years (jobs) | ļ | 0,000 | 10,477 | 10,040 | 20,000 | 20,742 | 20,104 |
| On-Site or In-Plant Training - Biomass | | 2,669 | 3,231 | 5,551 | 8,269 | 8,664 | 8,399 |
| sector - 4 to 10 years (jobs) | ļ | 2,007 | 0,201 | 0,001 | 0,207 | 0,004 | 0,077 |
| On-Site or In-Plant Training - Biomass | | 13,768 | 16,945 | 26,595 | 36,348 | 37,151 | 35,807 |
| sector - None (jobs) | ļ | 10,100 | 10,740 | 20,070 | 00,040 | 31,131 | 33,001 |
| On-Site or In-Plant Training - Biomass | | 589 | 670 | 994 | 1,303 | 1,282 | 1,237 |
| sector - Over 10 years (jobs) | ļ | 007 | 0.0 | //- | 1,000 | 1,202 | 1,201 |
| On-Site or In-Plant Training - Biomass | | 59,432 | 71,230 | 106,033 | 137,105 | 136,029 | 130,827 |
| sector - Up to 1 year (jobs) | ļ | 07,402 | 11,200 | 100,000 | 101,100 | 100,027 | 100,021 |
| On-Site or In-Plant Training - CO2 sector - | | 1,325 | 20,254 | 17,327 | 8,097 | 12,280 | 23,564 |
| 1 to 4 years (jobs) | ļ | 1,020 | 20,20 : | ,621 | 0,071 | 12,200 | 20,00 |
| On-Site or In-Plant Training - CO2 sector - | | 652 | 10,094 | 8,539 | 3,907 | 5,940 | 11,656 |
| 4 to 10 years (jobs) | | 302 | .0,07= | 0,557 | 5,701 | 3,7-10 | 1.,555 |
| On-Site or In-Plant Training - CO2 sector - | | 1,101 | 16,551 | 14,388 | 6,918 | 10,464 | 19,512 |
| None (jobs) | | 1,101 | 10,001 | 1-,000 | 0,710 | 10,-107 | 17,012 |
| On-Site or In-Plant Training - CO2 sector - | | 77.5 | 1,201 | 1,012 | 460 | 699 | 1,377 |
| Over 10 years (jobs) | | | .,201 | .,512 | 100 | | .,011 |
| On-Site or In-Plant Training - CO2 sector - | | 4,033 | 60,513 | 52,654 | 25,364 | 38,334 | 71,274 |
| Up to 1 year (jobs) | | .,555 | 20,010 | 32,30 ! | _0,00 ! | 35,50 / | ,, |
| | | | | | | <u> </u> | |

Table 32: E- scenario - IMPACTS - Jobs (continued)

| Table 32: E- scenario - IMPACTS - Jobs (con | tinuedj | | | | | | |
|---|---------|----------|---------|---------|--------------------|---------------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - Coal sector - | | 11,186 | 3,182 | 1,599 | 1,384 | 1,219 | 1,042 |
| 1 to 4 years (jobs) | | | | - | | | • |
| On-Site or In-Plant Training - Coal sector - | | 4,304 | 1,136 | 431 | 372 | 326 | 278 |
| 4 to 10 years (jobs) | | , | , | | | | _ |
| On-Site or In-Plant Training - Coal sector - | | 10,585 | 2,911 | 1,420 | 1,259 | 1,136 | 994 |
| None (jobs) | | 10,000 | 2,711 | 1,420 | 1,207 | 1,100 | ,,, |
| On-Site or In-Plant Training - Coal sector - | | 519 | 135 | 47.4 | 42.1 | 38 | 33.4 |
| Over 10 years (jobs) | | 317 | 133 | 41.4 | 42.1 | 36 | 33.4 |
| | | 45,080 | 10.007 | 7/0/ | / / 0 / | F /77 | 4,853 |
| On-Site or In-Plant Training - Coal sector - | | 45,080 | 13,086 | 7,424 | 6,436 | 5,677 | 4,853 |
| Up to 1 year (jobs) | | 00.100 | 440.007 | 4/4400 | 007000 | 004 (/ 0 | 000 5 (0 |
| On-Site or In-Plant Training - Grid sector - | | 90,199 | 118,834 | 161,138 | 207,208 | 301,648 | 388,568 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 39,614 | 52,179 | 70,737 | 90,939 | 132,353 | 170,446 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 79,526 | 104,407 | 141,090 | 180,823 | 262,378 | 336,907 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 5,135 | 6,760 | 9,159 | 11,767 | 17,115 | 22,027 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 307,754 | 404,968 | 548,500 | 704,545 | 1,024,584 | 1,318,505 |
| Up to 1 year (jobs) | | , . | . , | , | - , | , , , , , , , | , , |
| On-Site or In-Plant Training - Natural gas | | 93,144 | 69,692 | 52,578 | 44,991 | 36,270 | 29,485 |
| sector - 1 to 4 years (jobs) | | 70,144 | 07,072 | 02,010 | 77,771 | 00,210 | 27,400 |
| On-Site or In-Plant Training - Natural gas | | 41,339 | 31,167 | 23,829 | 20,702 | 16,834 | 13,779 |
| sector - 4 to 10 years (jobs) | | 41,337 | 31,101 | 23,629 | 20,102 | 10,034 | 13,117 |
| | | 00.000 | /F 10.0 | / 0 500 | / 0 0 5 5 | 20.700 | 07.000 |
| On-Site or In-Plant Training - Natural gas | | 88,008 | 65,188 | 48,520 | 40,955 | 32,692 | 26,390 |
| sector - None (jobs) | | | | | | 2.2.7 | |
| On-Site or In-Plant Training - Natural gas | | 4,901 | 3,722 | 2,877 | 2,528 | 2,067 | 1,700 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 325,428 | 241,881 | 179,991 | 151,372 | 120,795 | 97,369 |
| sector - Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 7,391 | 8,249 | 8,525 | 8,204 | 7,495 | 6,611 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 2,675 | 2,985 | 3,084 | 2,967 | 2,710 | 2,390 |
| sector - 4 to 10 years (jobs) | | | | - | | | |
| On-Site or In-Plant Training - Nuclear | | 8,966 | 9,985 | 10,296 | 9,888 | 9,015 | 7,935 |
| sector - None (jobs) | | 0,700 | ,,,,, | 10,270 | 7,000 | 7,0.0 | 1,700 |
| On-Site or In-Plant Training - Nuclear | | 251 | 280 | 288 | 277 | 253 | 223 |
| sector - Over 10 years (jobs) | | 201 | 200 | 200 | 211 | 200 | 220 |
| On-Site or In-Plant Training - Nuclear | | 30,805 | 34,338 | 35,441 | 34,067 | 31,085 | 27,385 |
| <u> </u> | | 30,805 | 34,336 | 35,441 | 34,067 | 31,065 | 21,365 |
| sector - Up to 1 year (jobs) | | 44 (004 | 407.707 | 07.404 | 00 ((4 | 74.000 | |
| On-Site or In-Plant Training - Oil sector - 1 | | 116,831 | 104,736 | 94,131 | 82,661 | 71,002 | 46,291 |
| to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 41,198 | 37,215 | 33,709 | 29,833 | 25,820 | 16,989 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 127,666 | 113,154 | 100,522 | 87,241 | 74,055 | 47,738 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 4,563 | 4,197 | 3,868 | 3,480 | 3,059 | 2,041 |
| Over 10 years (jobs) | | , | . | | • | | |
| On-Site or In-Plant Training - Oil sector - | | 502,621 | 448,835 | 401,798 | 351,423 | 300,645 | 195,301 |
| Up to 1 year (jobs) | | 002,021 | 110,000 | 401,170 | 001,420 | 000,040 | 170,001 |
| On-Site or In-Plant Training - Solar PV | | 86,342 | 122,621 | 130,474 | 141,459 | 183,962 | 222,715 |
| sector - 1 to 4 years (jobs) | | 00,342 | 122,021 | 130,414 | 141,437 | 103,702 | 222,110 |
| | | 20.070 | / 0 000 | /7.000 | F0 00 7 | /7.000 | 00.077 |
| On-Site or In-Plant Training - Solar PV | | 30,979 | 43,032 | 47,323 | 52,387 | 67,399 | 83,944 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 91,756 | 131,332 | 139,877 | 152,108 | 199,129 | 241,785 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 4,308 | 6,104 | 6,534 | 7,115 | 9,248 | 11,262 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 323,595 | 463,976 | 491,379 | 532,109 | 696,846 | 841,554 |
| sector - Up to 1 year (jobs) | | | | | | | |
| , | | | | | | I . | <u> </u> |

Table 32: E- scenario - IMPACTS - Jobs (continued)

| Table 32: E- Scendrio - IMPAGTS - Jobs (Cont | шиеиј | | | | | |
|---|-----------|-------------------|-----------|-----------|-----------|-----------|
| Item | 2020 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - Total jobs - 1 | 461,757 | 538,301 | 582,068 | 638,384 | 798,608 | 958,943 |
| to 4 years (jobs) | | | | | | |
| On-Site or In-Plant Training - Total jobs - 4 | 179,879 | 209,415 | 230,069 | 256,135 | 322,842 | 392,957 |
| to 10 years (jobs) | | | | | | |
| On-Site or In-Plant Training - Total jobs - | 472,993 | 549,490 | 593,418 | 650,818 | 806,800 | 963,008 |
| None (jobs) | , | | 0.0, | 555,515 | , | |
| On-Site or In-Plant Training - Total jobs - | 22,731 | 27,178 | 29,932 | 33,312 | 42,225 | 51,381 |
| Over 10 years (jobs) | 22,101 | 21,110 | 27,732 | 33,312 | 42,220 | 31,301 |
| On-Site or In-Plant Training - Total jobs - | 1,778,875 | 2,048,730 | 2,205,052 | 2,404,818 | 2,969,743 | 3,523,285 |
| | 1,110,013 | 2,046,130 | 2,205,052 | 2,404,010 | 2,909,143 | 3,323,203 |
| Up to 1 year (jobs) | | | 22172 | 100.00= | 1/0=00 | |
| On-Site or In-Plant Training - Wind sector | 46,757 | 80,235 | 99,452 | 120,997 | 160,789 | 217,513 |
| - 1 to 4 years (jobs) | | | | | | |
| On-Site or In-Plant Training - Wind sector | 16,449 | 28,377 | 36,866 | 46,759 | 62,796 | 85,076 |
| - 4 to 10 years (jobs) | | | | | | |
| On-Site or In-Plant Training - Wind sector | 51,616 | 89,018 | 110,709 | 135,277 | 180,779 | 245,939 |
| - None (jobs) | | | | | | |
| On-Site or In-Plant Training - Wind sector | 2,388 | 4,110 | 5,153 | 6,340 | 8,464 | 11,480 |
| - Over 10 years (jobs) | _,_,_ | ',''' | | -, | ,,,,,,, | , |
| On-Site or In-Plant Training - Wind sector | 180,127 | 309,901 | 381,831 | 462,397 | 615,749 | 836,217 |
| - Up to 1 year (jobs) | 100,121 | 307,701 | 301,031 | 402,071 | 013,147 | 030,211 |
| | E00100 | (07/0/ | 7/./. 000 | 017.07/ | 1.005.070 | 1 005 700 |
| On-the-Job Training - All sectors - 1 to 4 | 589,129 | 687,624 | 744,333 | 817,976 | 1,025,873 | 1,235,420 |
| years (jobs) | | | | | | |
| On-the-Job Training - All sectors - 4 to 10 | 169,191 | 199,532 | 221,283 | 248,227 | 315,641 | 387,596 |
| years (jobs) | | | | | | |
| On-the-Job Training - All sectors - None | 161,830 | 184,590 | 198,537 | 217,212 | 267,386 | 317,995 |
| (jobs) | | | | | | |
| On-the-Job Training - All sectors - Over 10 | 29,312 | 34,688 | 36,706 | 39,368 | 48,413 | 57,152 |
| years (jobs) | ,- | , , , , , , , , , | | , | _, | |
| On-the-Job Training - All sectors - Up to 1 | 1,966,773 | 2,266,679 | 2,439,679 | 2,660,684 | 3,282,905 | 3,891,411 |
| year (jobs) | 1,700,110 | 2,200,017 | 2,407,017 | 2,000,004 | 0,202,700 | 0,071,411 |
| On-the-Job Training - Biomass sector - 1 | 9,389 | 11,579 | 19,238 | 27,648 | 28,734 | 27,841 |
| | 9,369 | 11,579 | 19,236 | 21,048 | 20,134 | 21,841 |
| to 4 years (jobs) | 01/0 | 0.400 | / 000 | 70/5 | 7,00 | 7.400 |
| On-the-Job Training - Biomass sector - 4 | 2,148 | 2,693 | 4,803 | 7,245 | 7,639 | 7,428 |
| to 10 years (jobs) | | | | | | |
| On-the-Job Training - Biomass sector - | 5,279 | 6,082 | 9,258 | 12,627 | 12,720 | 12,160 |
| None (jobs) | | | | | | |
| On-the-Job Training - Biomass sector - | 604 | 691 | 1,053 | 1,421 | 1,417 | 1,369 |
| Over 10 years (jobs) | | | | | | |
| On-the-Job Training - Biomass sector - Up | 67,622 | 81,530 | 121,665 | 157,468 | 156,559 | 150,626 |
| to 1 year (jobs) | 0.75== | | , | 101,100 | , | , |
| On-the-Job Training - CO2 sector - 1 to 4 | 1,763 | 26,977 | 23,043 | 10,740 | 16,291 | 31,334 |
| years (jobs) | 1,100 | 20,711 | 25,045 | 10,140 | 10,271 | 31,334 |
| | /5/ | 10.010 | 0.500 | 2 001 | F 00/ | 11 7 / |
| On-the-Job Training - CO2 sector - 4 to 10 | 656 | 10,212 | 8,592 | 3,891 | 5,924 | 11,754 |
| years (jobs) | | | | | | |
| On-the-Job Training - CO2 sector - None | 338 | 5,026 | 4,422 | 2,168 | 3,276 | 5,997 |
| (jobs) | | | | | | |
| On-the-Job Training - CO2 sector - Over | 71.9 | 1,094 | 946 | 450 | 683 | 1,298 |
| 10 years (jobs) | | | | | | |
| On-the-Job Training - CO2 sector - Up to 1 | 4,360 | 65,304 | 56,917 | 27,497 | 41,543 | 77,000 |
| year (jobs) | , | | | , | , | , |
| On-the-Job Training - Coal sector - 1 to 4 | 14,210 | 4,006 | 1,915 | 1,660 | 1,465 | 1,255 |
| years (jobs) | 14,210 | 4,000 | 1,713 | 1,000 | 1,400 | 1,200 |
| | / 011 | 1 101 | / 00 | 0/0 | 01/ | 0/0 |
| On-the-Job Training - Coal sector - 4 to 10 | 4,211 | 1,121 | 423 | 363 | 316 | 268 |
| years (jobs) | | | | | | |
| On-the-Job Training - Coal sector - None | 3,553 | 972 | 508 | 448 | 402 | 350 |
| (jobs) | | | | | | |
| On-the-Job Training - Coal sector - Over | 482 | 139 | 70.7 | 63.4 | 57.9 | 51.4 |
| 10 years (jobs) | | | | | | |
| On-the-Job Training - Coal sector - Up to 1 | 49,217 | 14,212 | 8,005 | 6,959 | 6,155 | 5,276 |
| year (jobs) | 77,211 | 17,212 | 3,000 | 3,707 | 3,100 | 5,210 |
| your (Jobo) | | | | | | |

Table 32: E- scenario - IMPACTS - Jobs (continued)

| Table 32: E- scenario - IMPACTS - Jobs (co | ntinueaj | | | | | | |
|--|----------|---------|---------|---------|---------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-the-Job Training - Grid sector - 1 to 4 years (jobs) | | 117,311 | 154,477 | 209,364 | 269,088 | 391,534 | 504,100 |
| On-the-Job Training - Grid sector - 4 to 10 years (jobs) | | 39,869 | 52,548 | 71,283 | 91,697 | 133,538 | 172,077 |
| On-the-Job Training - Grid sector - None (jobs) | | 25,558 | 33,583 | 45,422 | 58,266 | 84,624 | 108,767 |
| On-the-Job Training - Grid sector - Over 10 years (jobs) | | 4,185 | 5,517 | 7,486 | 9,632 | 14,032 | 18,089 |
| On-the-Job Training - Grid sector - Up to 1 year (jobs) | | 335,305 | 441,023 | 597,069 | 766,598 | 1,114,349 | 1,433,419 |
| 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 - None (jobs) | | 28,855 | 21,202 | 15,568 | 12,935 | 10,235 | 8,197 |
| 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 - Natural gas sector - Up to 1 year (jobs) | | 356,885 | 265,191 | 197,228 | 165,749 | 132,187 | 106,510 |
| On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) | | 9,697 | 10,822 | 11,182 | 10,760 | 9,829 | 8,669 |
| On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) | | 2,339 | 2,610 | 2,697 | 2,596 | 2,372 | 2,092 |
| On-the-Job Training - Nuclear sector - None (jobs) | | 3,364 | 3,749 | 3,868 | 3,717 | 3,390 | 2,986 |
| On-the-Job Training - Nuclear sector - Over 10 years (jobs) | | 521 | 582 | 602 | 580 | 530 | 468 |
| On-the-Job Training - Nuclear sector - Up to 1 year (jobs) | | 34,167 | 38,073 | 39,285 | 37,751 | 34,438 | 30,330 |
| 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 - None (jobs) | | 48,244 | 42,447 | 37,430 | 32,239 | 27,156 | 17,403 |
| 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 - Oil sector - Up to 1 year (jobs) | | 558,254 | 498,517 | 446,253 | 390,274 | 333,848 | 216,802 |
| On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) | | 109,729 | 155,655 | 165,906 | 180,069 | 234,031 | 283,751 |
| On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) | | 30,665 | 42,443 | 46,934 | 52,136 | 66,972 | 83,805 |
| On-the-Job Training - Solar PV sector - None (jobs) | | 30,332 | 43,367 | 46,764 | 51,367 | 67,382 | 82,880 |
| On-the-Job Training - Solar PV sector - Over 10 years (jobs) | | 6,844 | 9,701 | 10,071 | 10,680 | 13,771 | 16,180 |
| On-the-Job Training - Solar PV sector - Up to 1 year (jobs) | | 359,410 | 515,899 | 545,912 | 590,926 | 774,427 | 934,644 |
| On-the-Job Training - Wind sector - 1 to 4 years (jobs) | | 60,037 | 103,125 | 128,372 | 156,825 | 208,736 | 282,610 |
| On-the-Job Training - Wind sector - 4 to 10 years (jobs) | | 15,832 | 27,298 | 35,647 | 45,394 | 60,958 | 82,489 |
| On-the-Job Training - Wind sector - None (jobs) | | 16,306 | 28,164 | 35,298 | 43,444 | 58,200 | 79,256 |
| On-the-Job Training - Wind sector - Over 10 years (jobs) | | 3,608 | 6,126 | 7,349 | 8,644 | 11,283 | 15,067 |
| On-the-Job Training - Wind sector - Up to 1 year (jobs) | | 201,554 | 346,928 | 427,344 | 517,462 | 689,400 | 936,803 |

Table 32: E- scenario - IMPACTS - Jobs (continued)

| Table 32: E- scenario - IMPACTS - Jobs (coi | ntinueuj | | | | | | |
|--|----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Related work experience - All sectors - 1 | | 1,059,755 | 1,215,937 | 1,309,813 | 1,433,440 | 1,776,043 | 2,113,756 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - All sectors - 4 | | 675,403 | 778,883 | 839,366 | 920,779 | 1,145,764 | 1,369,722 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - | | 412,312 | 479,693 | 520,232 | 570,168 | 708,706 | 848,028 |
| None (jobs) | | ,- | , | | , | , | , |
| Related work experience - All sectors - | | 187,752 | 216,027 | 230,005 | 249,597 | 308,897 | 365,935 |
| Over 10 years (jobs) | | 101,102 | 210,021 | 200,000 | 247,071 | 300,071 | 000,700 |
| Related work experience - All sectors - Up | | 581,013 | 682,574 | 741,123 | 809,483 | 1,000,808 | 1,192,133 |
| · | | 361,013 | 002,314 | 141,123 | 007,403 | 1,000,606 | 1,172,133 |
| to 1 year (jobs) | | 05 /75 | 01 500 | 50.050 | 40.000 | 71.007 | (0.00/ |
| Related work experience - Biomass sector | | 25,475 | 31,590 | 50,358 | 69,822 | 71,904 | 69,386 |
| - 1 to 4 years (jobs) | | 10.0/0 | 15.000 | | | | |
| Related work experience - Biomass sector | | 13,243 | 15,909 | 26,334 | 38,711 | 40,580 | 39,157 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 14,396 | 17,318 | 25,423 | 31,889 | 31,116 | 29,868 |
| - None (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 3,634 | 4,259 | 6,881 | 10,001 | 10,410 | 10,054 |
| - Over 10 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 28,293 | 33,498 | 47,022 | 55,985 | 53,058 | 50,959 |
| - Up to 1 year (jobs) | | | 55, | , | | , | |
| Related work experience - CO2 sector - 1 | | 2,572 | 38,682 | 33,555 | 16,084 | 24,311 | 45,391 |
| to 4 years (jobs) | | 2,512 | 30,002 | 33,333 | 10,004 | 24,011 | 43,371 |
| | | 1770 | 07,000 | 00.000 | 11.007 | 1/ / 00 | 01 / 0 / |
| Related work experience - CO2 sector - 4 | | 1,778 | 26,893 | 23,208 | 11,024 | 16,680 | 31,434 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 1,111 | 16,924 | 14,505 | 6,804 | 10,308 | 19,683 |
| None (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 438 | 6,520 | 5,709 | 2,781 | 4,197 | 7,707 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 1,290 | 19,595 | 16,943 | 8,053 | 12,221 | 23,169 |
| Up to 1 year (jobs) | | | | - | | | |
| Related work experience - Coal sector - 1 | | 27,190 | 7,760 | 4,177 | 3,623 | 3,197 | 2,734 |
| to 4 years (jobs) | | | ., | ., | 0,020 | 57.7. | _, |
| Related work experience - Coal sector - 4 | | 16,006 | 4,373 | 2,054 | 1,806 | 1,616 | 1,403 |
| · · | | 10,000 | 4,515 | 2,034 | 1,000 | 1,010 | 1,403 |
| to 10 years (jobs) | | 07// | 0.710 | 1.050 | 1100 | 10// | 005 |
| Related work experience - Coal sector - | | 9,744 | 2,719 | 1,358 | 1,180 | 1,044 | 895 |
| None (jobs) | | | | | | | |
| Related work experience - Coal sector - | | 4,035 | 1,138 | 566 | 500 | 450 | 393 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Coal sector - | | 14,699 | 4,460 | 2,767 | 2,384 | 2,089 | 1,775 |
| Up to 1 year (jobs) | | | | | | | |
| Related work experience - Grid sector - 1 | | 188,840 | 248,283 | 335,996 | 431,217 | 626,558 | 805,601 |
| to 4 years (jobs) | | | • | - | - | | |
| Related work experience - Grid sector - 4 | | 123,754 | 162,589 | 219,867 | 281,967 | 409,391 | 525,979 |
| to 10 years (jobs) | | 120,104 | 102,007 | 217,001 | 201,701 | 407,071 | 020,717 |
| Related work experience - Grid sector - | | 77,566 | 102,139 | 138,428 | 177,913 | 258,865 | 333,281 |
| | | 11,500 | 102,137 | 130,420 | 111,713 | 230,003 | 333,201 |
| None (jobs) | | 00.077 | /01// | F7.0F0 | 70.000 | 107.055 | 10 / 70 / |
| Related work experience - Grid sector - | | 32,077 | 42,166 | 57,053 | 73,209 | 106,355 | 136,724 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Grid sector - | | 99,992 | 131,970 | 179,280 | 230,976 | 336,909 | 434,867 |
| Up to 1 year (jobs) | | | | | | | |
| Related work experience - Natural gas | | 204,017 | 151,824 | 113,306 | 95,655 | 76,470 | 61,747 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Natural gas | | 135,709 | 101,088 | 75,757 | 64,353 | 51,598 | 41,784 |
| sector - 4 to 10 years (jobs) | | | | | | - , | , |
| Related work experience - Natural gas | | 80,026 | 59,877 | 45,157 | 38,619 | 31,112 | 25,287 |
| sector - None (jobs) | | 30,020 | 57,011 | 40,101 | 30,019 | 01,112 | 20,201 |
| | | 2/ 071 | 97.000 | 20 171 | 1/ 010 | 10 057 | 10,719 |
| Related work experience - Natural gas | | 36,871 | 27,298 | 20,171 | 16,819 | 13,357 | 10,719 |
| sector - Over 10 years (jobs) | | 2 | | F2 / - : | | | |
| Holated work expenience. Natural age | | 96,199 | 71,564 | 53,404 | 45,103 | 36,121 | 29,186 |
| Related work experience - Natural gas sector - Up to 1 year (jobs) | | 70,177 | 11,004 | 00,404 | 40,100 | 00,121 | 27,100 |

Table 32: E- scenario - IMPACTS - Jobs (continued)

| Table 32. E- Scellul lo - IMPAG 13 - Jobs (Co | mulinueuj | | | | | | |
|---|-----------|---------|---------|---------|---------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Related work experience - Nuclear sector | | 18,695 | 20,834 | 21,497 | 20,659 | 18,846 | 16,599 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 12,128 | 13,513 | 13,940 | 13,394 | 12,216 | 10,758 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 6,313 | 7,045 | 7,280 | 7,006 | 6,399 | 5,644 |
| - None (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 3,734 | 4,163 | 4,297 | 4,132 | 3,771 | 3,322 |
| - Over 10 years (jobs) | | | | - | | · | |
| Related work experience - Nuclear sector | | 9,217 | 10,281 | 10,619 | 10,214 | 9,327 | 8,222 |
| - Up to 1 year (jobs) | | | | - | | | |
| Related work experience - Oil sector - 1 to | | 302,135 | 269,872 | 241,614 | 211,329 | 180,792 | 117,324 |
| 4 years (jobs) | | | | | | · | - |
| Related work experience - Oil sector - 4 to | | 183,324 | 163,462 | 146,091 | 127,563 | 108,950 | 70,576 |
| 10 years (jobs) | | | | • | · | · | · |
| Related work experience - Oil sector - | | 106,857 | 95,809 | 86,141 | 75,674 | 65,021 | 42,502 |
| None (jobs) | | , | -, | , | -,- | | , |
| Related work experience - Oil sector - | | 52,718 | 46,922 | 41,873 | 36,525 | 31,181 | 20,166 |
| Over 10 years (jobs) | | , - | -, | , | , . | , - | ., |
| Related work experience - Oil sector - Up | | 147,845 | 132,071 | 118,309 | 103,547 | 88,636 | 57,791 |
| to 1 year (jobs) | | , | 10_,011 | , | ,. | 55,555 | 2.7. |
| Related work experience - Solar PV sector | | 186,024 | 266,270 | 284,039 | 309,311 | 405,153 | 492,891 |
| - 1 to 4 years (jobs) | | , | | | | , | , |
| Related work experience - Solar PV sector | | 120,241 | 171,610 | 182,799 | 198,639 | 259,422 | 314,784 |
| - 4 to 10 years (jobs) | | , | , | , | | | , |
| Related work experience - Solar PV sector | | 75,899 | 108,403 | 115,902 | 126,397 | 165,406 | 201,697 |
| - None (jobs) | | · | | - | • | | · |
| Related work experience - Solar PV sector | | 34,260 | 49,212 | 51,438 | 55,099 | 72,032 | 85,728 |
| - Over 10 years (jobs) | | , | | | | · | · |
| Related work experience - Solar PV sector | | 120,556 | 171,570 | 181,408 | 195,732 | 254,570 | 306,160 |
| - Up to 1 year (jobs) | | | | - | | | |
| Related work experience - Wind sector - 1 | | 104,807 | 180,823 | 225,270 | 275,742 | 368,812 | 502,083 |
| to 4 years (jobs) | | · | · | - | | | |
| Related work experience - Wind sector - 4 | | 69,220 | 119,444 | 149,316 | 183,323 | 245,311 | 333,848 |
| to 10 years (jobs) | | | | | - | | |
| Related work experience - Wind sector - | | 40,401 | 69,459 | 86,038 | 104,686 | 139,433 | 189,172 |
| None (jobs) | | , | , | • | · | · | , |
| Related work experience - Wind sector - | | 19,986 | 34,349 | 42,016 | 50,530 | 67,143 | 91,120 |
| Over 10 years (jobs) | | · | , | • | | · | |
| Related work experience - Wind sector - | | 62,923 | 107,564 | 131,370 | 157,489 | 207,877 | 280,004 |
| Up to 1 year (jobs) | | | , | | | , | , |
| 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) | | 32,660 | 43,548 | 59,790 | 77,883 | 114,904 | 150,070 |
| Wage income - Natural Gas (million \$2019) | | 36,633 | 27,637 | 20,860 | 17,785 | 14,393 | 11,770 |
| Wage income - Nuclear (million \$2019) | | 3,581 | 4,087 | 4,321 | 4,258 | 3,984 | 3,602 |
| Wage income - Oil (million \$2019) | | 52,193 | 47,217 | 42,805 | 37,909 | 32,838 | 21,560 |
| Wage income - Solar (million \$2019) | | 29,748 | 43,018 | 46,564 | 51,454 | 68,283 | 84,485 |
| Wage income - Wind (million \$2019) | | 17,282 | 30,245 | 38,469 | 48,100 | 65,475 | 90,643 |
| ************************************** | | 11,202 | 00,270 | 00,707 | 70,100 | 55,715 | 70,040 |

Table 33: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-----------|-----------|------|------|------|------|
| Commercial HVAC investment in 2020s - | | 1,047,657 | 1,162,511 | | | | |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Sales of cooking units - Electric | 32.5 | 46.4 | 80 | 86.6 | 87 | 87 | 87 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 67.5 | 53.6 | 20 | 13.4 | 13 | 13 | 13 |
| Sales of space heating units - Electric | 2.95 | 17.6 | 52.9 | 76.9 | 80.6 | 80.8 | 80.8 |
| Heat Pump (%) | | | | | | | |

| Table 22: E. DE. | coopania DILLAD 1 | Efficiency/Electrification - | Commonaid (continued) |
|------------------|----------------------|------------------------------|-------------------------|
| 1401E 33. E+KE+ | SCENULIO - PILLAR I. | EIIICIEIICV/EIECH IIICUHUH - | - Gummerciai icomunaeai |

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

Table 34: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

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

Table 35: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| Final energy use - Residential (PJ) | 11,788 | 11,090 | 10,221 | 8,966 | 7,776 | 6,967 | 6,512 |
| Final energy use - Transportation (PJ) | 27,996 | 26,390 | 23,464 | 19,872 | 16,608 | 14,565 | 13,649 |

Table 36: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Residential

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

${\it Table~37:~E+RE+~scenario~-PILLAR~1:~Efficiency/Electrification~-Transportation}$

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|--------|---------|---------|---------|---------|---------|
| Light-duty vehicle capital costs - | | 51,477 | 133,974 | 213,805 | 325,180 | 352,492 | 336,852 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Public EV charging plugs - DC Fast (1000 | 14.4 | | 93.9 | | 391 | | 628 |
| units) | | | | | | | |
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 2,256 | | 9,394 | | 15,098 |
| 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 |

Table 37: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Transportation (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|------|
| 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 |
| Vehicle sales - Light-duty - diesel (%) | 1.4 | 1.68 | 1.2 | 0.382 | 0.072 | 0.013 | 0 |
| 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 - 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 - diesel (%) | 64.7 | 59.7 | 42.3 | 14.4 | 2.59 | 0.384 | 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 - hydrogen | 0.196 | 1.27 | 6.33 | 15.2 | 19.1 | 19.9 | 20 |
| FC (%) | | | | | | | |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.255 | 0.205 | 0.083 | 0.019 | 0.004 | 0 |

Table 38: E+RE+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---------|---------|---------|---------|-----------|-----------|-----------|
| Capital invested - Biomass power plant | 0 | 0.001 | 0.006 | 0.011 | 0.001 | 0 | 0 |
| (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu allam | 0 | 0 | 0 | 0.175 | 0.15 | 0.086 | 0.162 |
| power plant (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu power | 0 | 0 | 0.198 | 0.008 | 0.074 | 0.13 | 0.137 |
| plant (billion \$2018) | | | | | | | |
| 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 - 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 - Coal (MW) | 216,076 | 60,056 | 185 | 104 | 84.5 | 61 | 26.1 |
| Installed - Ct (MW) | 146,242 | 137,398 | 142,744 | 165,901 | 204,190 | 319,096 | 515,962 |
| Installed - Geothermal (MW) | 2,390 | 2,394 | 2,414 | 2,426 | 2,428 | 2,457 | 4,871 |
| Installed - Grid battery storage (MW) | | 987 | 11,630 | 42,944 | 105,233 | 143,960 | 186,175 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Nuclear (MW) | 98,501 | 94,063 | 83,809 | 56,742 | 41,522 | 14,825 | 0 |
| Installed - Offshore wind (MW) | 29.3 | 1,026 | 4,957 | 36,176 | 99,902 | 227,465 | 457,951 |
| Installed - Onshore wind (MW) | 97,803 | 200,500 | 386,229 | 693,913 | 1,069,220 | 1,521,230 | 2,186,500 |
| Installed - Other (MW) | 68,093 | 57,211 | 55,709 | 54,353 | 52,339 | 51,350 | 40,191 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |
| 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 |

Table 39: E+RE+ scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Biomass (TWh) | 18.8 | 17.7 | 39 | 29.3 | 21.4 | 15.2 | 0.108 |
| Biomass power plant (GWh) | 3,549 | 620 | 9,773 | 9,073 | 6,438 | 2,637 | 31.1 |
| Biomass w cc (TWh) | 0 | 0 | 0.079 | 0.098 | 0.188 | 0.358 | 0.556 |
| Biomass w/ccu allam power plant (GWh) | 0 | 0 | 0 | 51.1 | 90 | 161 | 285 |
| Biomass w/ccu power plant (GWh) | 0 | 0 | 79 | 47.1 | 97.6 | 197 | 271 |
| Coal (TWh) | 981 | 328 | 0.647 | 0.364 | 0.296 | 0.214 | 0.092 |
| 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 |
| Geothermal (TWh) | 14.5 | 14.5 | 14.1 | 14.2 | 13.7 | 13.5 | 25.7 |
| Hydro (TWh) | 300 | 312 | 295 | 294 | 300 | 291 | 291 |
| Nuclear (TWh) | 802 | 766 | 683 | 462 | 338 | 121 | 0 |
| Offshore wind (TWh) | 0.092 | 3.82 | 20.2 | 183 | 437 | 978 | 1,833 |

Table 39: E+RE+ scenario - PILLAR 2: Clean Electricity - Generation (continued)

| | | , | • | , | | | |
|------------------------|------|------|-------|-------|-------|-------|-------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Onshore wind (TWh) | 413 | 816 | 1,593 | 2,720 | 4,109 | 5,852 | 8,245 |
| 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 |

Table 40: E+RE+ scenario - PILLAR 2: Clean Electricity - Transmission

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Total HV transmission (for wind and solar) | 0 | 13.4 | 35.1 | 86.8 | 162 | 267 | 430 |
| - Base all (%) | | | | | | | |

Table 41: E+RE+ scenario - PILLAR 3: Clean fuels - Bioenergy

| | • | | | | | | |
|---|---------|---------|---------|---------|---------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 2.28 | 19,065 | 118,177 | 120,886 |
| Biomass input - Bio-FT w/ CC (1000 | 0 | 0 | 0 | 67.5 | 112 | 276 | 352 |
| tonnes) | | | | | | | |
| Biomass input - Bio-SNG w/ CC (1000 | 0 | 0 | 9.39 | 4.81 | 7.06 | 45.5 | 179,016 |
| tonnes) | | | | | | | |
| Biomass input - Biopower (1000 tonnes) | 11,647 | 16,788 | 55,652 | 45,494 | 37,066 | 28,898 | 161 |
| Biomass input - Biopower w/ cc (1000 | 0 | 0 | 47.7 | 51.6 | 99.5 | 192 | 292 |
| tonnes) | | | | | | | |
| Biomass input - Ethanol (1000 tonnes) | 129,506 | 129,506 | 129,536 | 125,006 | 67,634 | 10,261 | 905 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 158 | 201 | 193 | 104 |
| Biomass input - Pyrolysis liquids (1000 | 0 | 0 | 0 | 64,735 | 133,702 | 142,225 | 140,053 |
| tonnes) | | | | | | | |
| Biomass input - Pyrolysis liquids w/ cc | 0 | 0 | 0 | 65.4 | 117 | 7,078 | 142,580 |
| (1000 tonnes) | | | | | | | |
| Biomass input - SNG (1000 tonnes) | 0 | 9.34 | 18.9 | 26 | 25.6 | 52.2 | 8.78 |
| | | | | | | | |

Table 42: E+RE+ scenario - PILLAR 4: CCUS - CO2 storage

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|-------------------|------|------|------|------|------|------|------|
| CO2 storage (MMT) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 43: E+RE+ scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------------------------------|------|------|------|------|------|------|----------|
| Carbon sink potential - Aggressive | | | | | | | -23,286 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -203,503 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -7,391 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -234,180 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -23,286 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -106,430 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -3,696 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -133,412 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |

Table 43: E+RE+ scenario - PILLAR 6: Land sinks - Agriculture (continued)

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

Table 44: E+RE+ scenario - PILLAR 6: Land sinks - Forests

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

Table 44: E+RE+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Low - Reforest | | | | | | | -121,000 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -20,000 |
| pasture (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Low - Restore | | | | | | | -60,000 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Accelerate | | | | | | | -36,700 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - All (not | | | | | | | |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1,020,20 |
| Carbon sink potential - Mid - Avoid | | | | | | | -49,000 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Extend | | | | | | | -209,000 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Improve | | | | | | | -42,500 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | |
| retention of HWP (1000 tCO2e/y) | | | | | | | 200,000 |
| Carbon sink potential - Mid - Increase | | | | | | | -40,500 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -181,50 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -142,00 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Restore | | | | | | | -119,00 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 8,00 |
| High - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 11,37 |
| High - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 154,00 |
| High - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 21,00 |
| High - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | |
| High - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 5,70 |
| High - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 16,00 |
| High - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 7,50 |
| High - Reforest pasture (1000 hectares) | | | | | | | .,00 |
| Land impacted for carbon sink potential - | | | | | | | 59,00 |
| High - Restore productivity (1000 | | | | | | | 07,00 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 282,57 |
| High - Total impacted (over 30 years) | | | | | | | 202,01 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 4,00 |
| Low - Accelerate regeneration (1000 | | | | | | | 4,00 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 10,67 |
| | | | | | | | 10,67 |
| Low - Avoid deforestation (over 30 years) | | | | | | | l |

Table 44: E+RE+ scenario - PILLAR 6: Land sinks - Forests (continued)

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

Table 45: 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 46: E+RE+ scenario - IMPACTS - Fossil fuel industries

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|-------|-------|---------|
| Natural gas consumption - Annual (tcf) | | 22,299 | 18,474 | 12,539 | 8,059 | 4,669 | 3,040 |
| Natural gas consumption - Cumulative (tcf) | | | | | | | 408,044 |

Table 46: E+RE+ scenario - IMPACTS - Fossil fuel industries (continued)

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

Table 47: E+RE+ scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|---------|--------|--------|--------|--------|-------|
| Monetary damages from air pollution - | | 22,661 | 29.5 | 28.3 | 24.2 | 16.6 | 1.24 |
| Coal (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 11,869 | 8,363 | 4,638 | 3,236 | 1,166 | 340 |
| Natural Gas (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 102,386 | 96,814 | 74,557 | 43,657 | 20,044 | 7,790 |
| Transportation (million 2019\$) | | | | | | | |
| Premature deaths from air pollution - | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Coal (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1,340 | 944 | 524 | 365 | 132 | 38.4 |
| Natural Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 11,515 | 10,889 | 8,385 | 4,910 | 2,254 | 876 |
| Transportation (deaths) | | | | | | | |

Table 48: 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) | | 615,091 | 766,830 | 1,095,266 | 1,315,338 | 1,662,012 | 2,268,223 |
| By economic sector - Manufacturing | | 708,145 | 931,655 | 1,298,402 | 1,269,224 | 1,433,061 | 1,851,180 |
| (jobs) | | , | , | | | | |
| By economic sector - Mining (jobs) | | 455,199 | 345,035 | 249,121 | 151,098 | 81,299 | 14,201 |
| By economic sector - Other (jobs) | | 62,554 | 92,801 | 154,006 | 200,123 | 276,352 | 415,903 |
| By economic sector - Pipeline (jobs) | | 44,749 | 39,489 | 31,071 | 21,589 | 13,204 | 3,548 |
| By economic sector - Professional (jobs) | | 343,678 | 420,403 | 600,437 | 759,221 | 993,617 | 1,406,825 |
| By economic sector - Trade (jobs) | | 307,034 | 326,576 | 410,763 | 477,213 | 603,718 | 845,202 |
| By economic sector - Utilities (jobs) | | 489,095 | 552,098 | 796,794 | 1,016,890 | 1,333,474 | 1,878,475 |
| By education level - All sectors - | | 923,227 | 1,076,952 | 1,462,875 | 1,664,246 | 2,059,407 | 2,814,023 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - All sectors - | | 670,997 | 748,208 | 965,469 | 1,070,614 | 1,301,578 | 1,756,710 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - All sectors - Doctoral | | 22,068 | 24,725 | 32,096 | 37,384 | 46,651 | 64,043 |
| degree (jobs) | | | | | | | |
| By education level - All sectors - High | | 1,283,452 | 1,486,758 | 1,991,046 | 2,216,725 | 2,701,665 | 3,661,110 |
| school diploma or less (jobs) | | | | | | | |
| By education level - All sectors - Masters | | 157,445 | 175,142 | 227,123 | 258,114 | 318,631 | 434,938 |
| or professional degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 15,552 | 16,889 | 19,994 | 22,250 | 26,445 | 49,645 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Biomass sector - | | 14,138 | 15,252 | 17,355 | 20,555 | 25,986 | 49,050 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 685 | 770 | 905 | 1,198 | 1,633 | 3,096 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Biomass sector - High | | 47,358 | 52,271 | 59,779 | 55,811 | 55,334 | 96,306 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Biomass sector - | | 3,886 | 4,287 | 4,946 | 5,961 | 7,609 | 14,274 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - CO2 sector - | | 0 | 0.004 | 0.003 | 0.004 | 0.006 | 0.003 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - CO2 sector - | | 0 | 0.004 | 0.003 | 0.004 | 0.006 | 0.003 |
| Bachelors degree (jobs) | | | | | | | |

Table 48: E+RE+ scenario - IMPACTS - Jobs (continued)

| By education level - CO2 sector - Doctoral degree (jobs) 0 | 045 209 0 0 0.00 007 0.00 001 0.0 312 1,99 |
|--|--|
| degree (jobs) 0.001 0.005 0.004 0.006 0.00 school diploma or less (jobs) 0.001 0.005 0.004 0.006 0.00 By education level - CO2 sector - Masters or professional degree (jobs) 0.001 0.0 | 007 0.00 001 0.0 312 1,99 |
| By education level - CO2 sector - High school diploma or less (jobs) 0.001 0.005 0.004 0.006 0.005 By education level - CO2 sector - Masters or professional degree (jobs) 0 0.001 | 001 0.0 312 1,9 |
| school diploma or less (jobs) By education level - CO2 sector - Masters or professional degree (jobs) By education level - Coal sector - 22,915 6,176 2,967 2,570 2, Associates degree or some college (jobs) By education level - Coal sector - 14,923 3,797 1,687 1,511 1,44 | 001 0.0 312 1,9 |
| By education level - CO2 sector - Masters 0 0.001 0.001 0.001 0.001 or professional degree (jobs) By education level - Coal sector - 22,915 6,176 2,967 2,570 2, Associates degree or some college (jobs) By education level - Coal sector - 14,923 3,797 1,687 1,511 1,4 Bachelors degree (jobs) | 312 1,93 |
| or professional degree (jobs) By education level - Coal sector - Associates degree or some college (jobs) By education level - Coal sector - Bachelors degree (jobs) 14,923 3,797 1,687 1,511 1,4 | 312 1,93 |
| By education level - Coal sector - Associates degree or some college (jobs) By education level - Coal sector - Bachelors degree (jobs) 22,915 6,176 2,967 2,570 2, 14,923 3,797 1,687 1,511 1,4 | |
| Associates degree or some college (jobs) By education level - Coal sector - 14,923 3,797 1,687 1,511 1,4 Bachelors degree (jobs) | |
| By education level - Coal sector - 14,923 3,797 1,687 1,511 1,4 Bachelors degree (jobs) | 1,20 |
| Bachelors degree (jobs) | 1,21 |
| | I |
| By adjusting level Cool spoton Doctoral | 5.9 40 |
| By education level - Coal sector - Doctoral 540 139 51.4 47.7 4 degree (jobs) | 5.9 40 |
| | 3,50 |
| school diploma or less (jobs) | ,00 3,30 |
| | 311 2 |
| or professional degree (jobs) | 311 |
| By education level - Grid sector - 191,619 259,230 444,808 596,108 824, | 718 1,195,85 |
| Associates degree or some college (jobs) | 1,170,0 |
| By education level - Grid sector - 109,809 147,584 251,609 335,059 460, | 670 663,8 |
| Bachelors degree (jobs) | 000,0 |
| By education level - Grid sector - Doctoral 3,166 4,183 7,012 9,180 12,4 | <u>+09 17,58</u> |
| degree (jobs) | 11,50 |
| By education level - Grid sector - High 245,031 333,160 574,535 773,813 1,075,9 | 909 1,567,7 |
| school diploma or less (jobs) | 1,001,1 |
| By education level - Grid sector - Masters 27,631 37,021 62,921 83,535 114,5 | 08 164,53 |
| or professional degree (jobs) | 10 1,00 |
| By education level - Natural gas sector - 173,454 138,732 102,315 85,093 58,5 | 524 45,7 |
| Associates degree or some college (jobs) | ,24 40,1 |
| By education level - Natural gas sector - 120,841 94,837 68,163 54,426 35,8 | 365 26,0 |
| Bachelors degree (jobs) | 20,0 |
| | ,141 78 |
| Doctoral degree (jobs) | |
| | 931 51,28 |
| High school diploma or less (jobs) | |
| | 767 6,40 |
| Masters or professional degree (jobs) | |
| | 957 1,1 |
| Associates degree or some college (jobs) | |
| | 238 1,1 |
| Bachelors degree (jobs) | |
| By education level - Nuclear sector - 646 615 452 307 | 181 50 |
| Doctoral degree (jobs) | |
| By education level - Nuclear sector - High 16,926 16,282 12,115 8,305 4,9 | 964 1,40 |
| school diploma or less (jobs) | |
| By education level - Nuclear sector - 3,990 3,812 2,817 1,919 1, | 139 33 |
| Masters or professional degree (jobs) | |
| By education level - Oil sector - Associates 205,534 180,474 151,993 103,553 64, | 672 10,46 |
| degree or some college (jobs) | |
| By education level - Oil sector - Bachelors 212,005 183,408 152,219 101,861 62,5 | 544 10,1 |
| degree (jobs) | |
| By education level - Oil sector - Doctoral 6,849 5,963 4,985 3,354 2,0 | 073 3 |
| degree (jobs) | |
| By education level - Oil sector - High 317,683 280,308 237,011 162,536 102,0 | 16,3 |
| school diploma or less (jobs) | |
| | 932 2,2 |
| professional degree (jobs) | |
| By education level - Solar PV sector - 199,096 287,606 435,512 467,266 589,6 | 662 824,3 |
| Associates degree or some college (jobs) | |
| By education level - Solar PV sector - 116,255 169,874 259,498 279,991 356, | 591 502,9 |
| Bachelors degree (jobs) | |

Table 48: E+RE+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|---------|---------|------------|-----------|-----------|-----------|
| By education level - Solar PV sector - | | 3,596 | 5,264 | 8,256 | 9,557 | 12,503 | 18,225 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Solar PV sector - High | | 279,619 | 400,826 | 601,954 | 639,042 | 798,578 | 1,104,496 |
| school diploma or less (jobs) By education level - Solar PV sector - | | 24,804 | 36,432 | 56,429 | 62,798 | 81,195 | 116,575 |
| Masters or professional degree (jobs) | | 24,804 | 30,432 | 36,429 | 02,198 | 61,195 | 116,575 |
| By education level - Wind sector - | | 101,421 | 174,762 | 295,578 | 380,766 | 489,116 | 684,955 |
| Associates degree or some college (jobs) | | 101,421 | 114,102 | 273,310 | 300,100 | 407,110 | 004,733 |
| By education level - Wind sector - | | 68,289 | 119,349 | 204,494 | 270,085 | 354,280 | 502,298 |
| Bachelors degree (jobs) | | 00,207 | 117,017 | 20 1, 17 1 | 210,000 | 00 1,200 | 002,270 |
| By education level - Wind sector - | | 2,569 | 4,664 | 8,198 | 11,971 | 16,666 | 23,922 |
| Doctoral degree (jobs) | | , | , | | • | -, | |
| By education level - Wind sector - High | | 131,912 | 224,599 | 375,743 | 471,570 | 592,611 | 819,947 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Wind sector - Masters | | 15,806 | 28,118 | 48,799 | 67,482 | 91,169 | 130,304 |
| or professional degree (jobs) | | | | | | | |
| 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) | | 577,256 | 781,177 | 1,340,885 | 1,797,695 | 2,488,215 | 3,609,601 |
| By resource sector - Natural Gas (jobs) | | 540,072 | 429,685 | 313,458 | 255,339 | 172,228 | 130,289 |
| By resource sector - Nuclear (jobs) | | 49,936 | 47,897 | 35,536 | 24,295 | 14,480 | 4,078 |
| By resource sector - Oil (jobs) | | 790,152 | 691,583 | 580,471 | 394,105 | 245,253 | 39,559 |
| By resource sector - Solar (jobs) | | 623,369 | 900,002 | 1,361,648 | 1,458,654 | 1,838,529 | 2,566,564 |
| By resource sector - Wind (jobs) | | 319,998 | 551,492 | 932,812 | 1,201,874 | 1,543,842 | 2,161,427 |
| Median wages - Annual - Biomass (\$2019 | | 51,709 | 53,024 | 54,711 | 58,635 | 62,473 | 64,124 |
| per job) | | | | | | | |
| Median wages - Annual - CO2 (\$2019 per | | 70,992 | 72,624 | 74,331 | 76,115 | 77,980 | 79,929 |
| job) | | | | | | | |
| Median wages - Annual - Coal (\$2019 per | | 60,299 | 59,831 | 55,635 | 56,518 | 57,460 | 58,461 |
| job) | | | | | | | |
| Median wages - Annual - Grid (\$2019 per | | 62,539 | 63,375 | 64,248 | 65,159 | 66,110 | 67,102 |
| job) | | | | | | | |
| Median wages - Annual - Natural Gas | | 66,255 | 67,149 | 67,918 | 68,399 | 68,816 | 68,665 |
| (\$2019 per job) | | | | | | | |
| Median wages - Annual - Nuclear (\$2019 | | 71,486 | 73,188 | 74,974 | 76,846 | 78,808 | 80,864 |
| per job) | | | | | | | |
| Median wages - Annual - Oil (\$2019 per | | 65,834 | 66,727 | 67,655 | 68,473 | 69,353 | 70,884 |
| job) | | | | | | | |
| Median wages - Annual - Solar (\$2019 per | | 55,327 | 56,038 | 56,875 | 57,941 | 58,924 | 60,009 |
| job) | | | | | | | |
| Median wages - Annual - Wind (\$2019 per | | 58,021 | 59,082 | 60,123 | 61,956 | 63,600 | 64,825 |
| job) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 8,227 | 9,032 | 10,798 | 11,784 | 13,705 | 25,340 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 2,556 | 2,763 | 3,401 | 3,988 | 4,919 | 9,426 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 13,142 | 14,575 | 17,029 | 18,260 | 20,980 | 37,999 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 572 | 605 | 679 | 668 | 712 | 1,355 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 57,121 | 62,494 | 71,072 | 71,076 | 76,689 | 138,249 |
| sector - Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 0 | 0.002 | 0.002 | 0.002 | 0.003 | 0.002 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 4 to 10 years (jobs) | | _ | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 0 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 |
| None (jobs) | | | | _ | | _ | _ |
| Un Urta an In Diant Training 000 seaton | | | | | ^ | | 0 |
| On-Site or In-Plant Training - CO2 sector - Over 10 years (jobs) | | 0 | 0 | 0 | 0 | 0 | 0 |

Table 48: E+RE+ scenario - IMPACTS - Jobs (continued)

| Table 48: E+RE+ scenario - IMPACTS - Jobs (| continue | uj | | | | | |
|---|----------|---------|---------|---------|-----------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - CO2 sector - | | 0.001 | 0.008 | 0.007 | 0.01 | 0.012 | 0.007 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 11,633 | 3,188 | 1,585 | 1,363 | 1,217 | 1,005 |
| 1 to 4 years (jobs) | | | , | · | | , | |
| On-Site or In-Plant Training - Coal sector - | | 4,427 | 1,140 | 427 | 366 | 326 | 268 |
| 4 to 10 years (jobs) | | ., | .,0 | | 000 | 020 | |
| On-Site or In-Plant Training - Coal sector - | | 10,986 | 2,917 | 1,406 | 1,239 | 1,134 | 957 |
| None (jobs) | | 10,700 | 2,711 | 1,400 | 1,207 | 1,104 | /51 |
| On-Site or In-Plant Training - Coal sector - | | 532 | 135 | 47 | 41.4 | 38 | 32.2 |
| - | | 552 | 135 | 47 | 41.4 | 36 | 32.2 |
| Over 10 years (jobs) | | 17.010 | 10.101 | 7.057 | , , , , , | F / / F | , , , , , |
| On-Site or In-Plant Training - Coal sector - | | 47,210 | 13,101 | 7,354 | 6,336 | 5,665 | 4,674 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 99,703 | 135,096 | 232,175 | 311,640 | 431,837 | 627,144 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 43,788 | 59,319 | 101,921 | 136,772 | 189,475 | 275,097 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 87,906 | 118,694 | 203,289 | 271,956 | 375,618 | 543,762 |
| None (jobs) | | -, | -,- | | , | ,- | , |
| On-Site or In-Plant Training - Grid sector - | | 5,676 | 7,685 | 13,196 | 17,697 | 24,502 | 35,551 |
| Over 10 years (jobs) | | 3,010 | 1,000 | 10,170 | 11,071 | 24,002 | 00,001 |
| On-Site or In-Plant Training - Grid sector - | | 340,182 | 460,384 | 790,303 | 1,059,630 | 1,466,784 | 2,128,047 |
| | | 340,182 | 460,384 | 190,303 | 1,059,630 | 1,466,764 | 2,128,047 |
| Up to 1 year (jobs) | | 21.222 | | | | | 22.12.1 |
| On-Site or In-Plant Training - Natural gas | | 91,008 | 72,717 | 53,365 | 43,919 | 29,964 | 23,136 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 40,405 | 32,509 | 24,091 | 20,136 | 13,945 | 11,033 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 85,997 | 68,068 | 49,491 | 40,303 | 27,179 | 20,634 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 4,794 | 3,885 | 2,913 | 2,474 | 1,732 | 1,384 |
| sector - Over 10 years (jobs) | | ., | 0,000 | _,, | _, | .,. 0_ | ., |
| On-Site or In-Plant Training - Natural gas | | 317,869 | 252,506 | 183,598 | 148,507 | 99,407 | 74,103 |
| sector - Up to 1 year (jobs) | | 311,009 | 232,300 | 103,370 | 140,501 | 77,401 | 14,103 |
| On-Site or In-Plant Training - Nuclear | | 72/0 | 7,076 | E OE/ | 3,598 | 2,147 | 605 |
| | | 7,369 | 7,076 | 5,256 | 3,598 | 2,147 | 605 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 2,667 | 2,560 | 1,901 | 1,301 | 776 | 219 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 8,938 | 8,565 | 6,348 | 4,336 | 2,582 | 727 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 250 | 240 | 178 | 122 | 72.4 | 20.4 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 30,712 | 29,456 | 21,852 | 14,938 | 8,903 | 2,507 |
| sector - Up to 1 year (jobs) | | 00,1.12 | 27, 100 | 21,002 | 1 1,700 | 0,700 | 2,001 |
| On-Site or In-Plant Training - Oil sector - 1 | | 116,435 | 102,317 | 86,241 | 58,766 | 36,712 | 5,954 |
| | | 110,433 | 102,311 | 00,241 | 30,100 | 30,112 | 5,954 |
| to 4 years (jobs) | | /1.055 | 04.004 | 00.000 | 01.17/ | 10.000 | 0.157 |
| On-Site or In-Plant Training - Oil sector - | | 41,055 | 36,334 | 30,828 | 21,174 | 13,322 | 2,156 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 127,228 | 110,514 | 92,040 | 61,993 | 38,270 | 6,123 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 4,547 | 4,098 | 3,539 | 2,472 | 1,580 | 261 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 500,887 | 438,320 | 367,823 | 249,700 | 155,369 | 25,065 |
| Up to 1 year (jobs) | | 000,001 | 100,020 | 00.,020 | 217,100 | 100,007 | 20,000 |
| On-Site or In-Plant Training - Solar PV | | 100,025 | 143,715 | 216,807 | 232,302 | 291,908 | 406,416 |
| sector - 1 to 4 years (jobs) | | 100,023 | 140,110 | 210,001 | 202,002 | 271,700 | 400,410 |
| | | 05.015 | 10077 | 75 / 00 | 00 / 0/ | 105 110 | 1/7501 |
| On-Site or In-Plant Training - Solar PV | | 35,315 | 49,977 | 75,490 | 83,404 | 105,119 | 147,501 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 106,536 | 154,101 | 233,551 | 250,640 | 316,508 | 442,691 |
| sector - None (jobs) | | | | | | | |
| | | | | | 44 400 | 44 40- | 00 / 0 / |
| On-Site or In-Plant Training - Solar PV | | 4,979 | 7,145 | 10,791 | 11,628 | 14,635 | 20,426 |

Table 48: E+RE+ scenario - IMPACTS - Jobs (continued)

| District or In-Plant Training - Solar PV 376,514 545,064 825,009 880,680 1,110,360 1,549; sector - Up to I year (jobs) District or In-Plant Training - Total jobs - 1 484,678 559,607 752,069 851,450 1,048,770 1,426; 10 (1) years (jobs) District or In-Plant Training - Total jobs - 4 187,730 215,098 289,739 337,916 421,771 576, 10 (1) years (jobs) District or In-Plant Training - Total jobs - 4 496,271 573,379 765,795 859,173 1,053,568 1,433, 1,433, 1,434, 1,435, | Table 48: E+RE+ scenario - IMPACIS - Job | | , | | | | | |
|--|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Sector - Up to I year (jobs) On-Site or In-Plant Training - Total jobs - 1 | | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Dn-Site or In-Plant Training - Total jobs - 1 | | | 376,514 | 545,064 | 825,009 | 880,680 | 1,110,360 | 1,549,529 |
| to 4 years (jobs) On-Site or In-Plant Training - Total jobs - 4 to 10 years (jobs) On-Site or In-Plant Training - Total jobs - 4 to 10 years (jobs) On-Site or In-Plant Training - Total jobs - 4 to 10 years (jobs) On-Site or In-Plant Training - Total jobs - 2 23,913 28,218 38,829 44,899 55,961 76 76 7000000000000000000000000000000 | | | | | | | | |
| Dn-Site or In-Plant Training - Total jobs - 4 to 10 years (jobs) | | | 484,678 | 559,607 | 752,069 | 851,450 | 1,048,770 | 1,426,206 |
| To 10 years (jobs) | | | | | | | | |
| Dn-Site or In-Plant Training - Total jobs - None (jobs) 23,913 28,218 38,829 44,899 55,961 76 76 76 76 76 76 76 | • • | | 187,730 | 215,098 | 289,739 | 337,916 | 421,771 | 576,579 |
| None (jobs) Con-Site or In-Plant Training - Total jobs - Cover 10 years (jobs) Con-Site or In-Plant Training - Total jobs - Cover 10 years (jobs) Con-Site or In-Plant Training - Total jobs - Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-Site or In-Plant Training - Wind sector Cover 10 years (jobs) Con-He-Job Training - All sectors - 1 to 4 Cover (jobs) Con-He-Job Training - All sectors - 4 to 10 Cover (jobs) Con-He-Job Training - All sectors - 4 to 10 Cover (jobs) Con-He-Job Training - All sectors - Over 10 Cover (jobs) Con-He-Job Training - All sectors - Over 10 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Biomass sector - 1 Cover (jobs) Con-He-Job Training - Cover (jobs) Con | | | | | | | | |
| On-Site or In-Plant Training - Total jobs - Over 10 years (jobs) | | | 496,271 | 573,379 | 765,795 | 859,173 | 1,053,568 | 1,433,509 |
| Over 10 years (jobs) | | | | | | | | |
| Dn-Site or In-Plant Training - Notal jobs - Up to 1 year (jobs) Dn-Site or In-Plant Training - Wind sector - 1 to 1 year (jobs) Solution - 1 to 1 years (jobs) Solution - 1 to 2 years (jobs) Solution - 1 to 4 years (jobs) So | | | 23,913 | 28,218 | 38,829 | 44,899 | 55,961 | 76,771 |
| Up to 1 year (jobs) | | | | | | | | |
| On-Site or In-Plant Training - Wind sector | | | 1,864,597 | 2,135,484 | 2,832,177 | 3,153,645 | 3,847,864 | 5,217,758 |
| -1 to 4 years [jobs] On-Site or In-Plant Training - Wind sector -4 to 10 years [jobs] On-Site or In-Plant Training - Wind sector - None [jobs] On-Site or In-Plant Training - Wind sector - None [jobs] On-Site or In-Plant Training - Wind sector - Over 10 years [jobs] On-Site or In-Plant Training - Wind sector - Over 10 years [jobs] On-Site or In-Plant Training - Wind sector - Over 10 years [jobs] On-Site or In-Plant Training - Wind sector - Up to 1 year [jobs] On-Site or In-Plant Training - Wind sector - Up to 1 year [jobs] On-the-Job Training - All sectors - 1 to 4 - Up to 1 year [jobs] On-the-Job Training - All sectors - 4 to 10 - years [jobs] On-the-Job Training - All sectors - None - In-Plant Training - Wind sector - Up to 1 year [jobs] On-the-Job Training - All sectors - Up to 1 - Years [jobs] On-the-Job Training - All sectors - Up to 1 - Years [jobs] On-the-Job Training - All sectors - Up to 1 - Years [jobs] On-the-Job Training - Biomass sector - 1 - Up 4 years [jobs] On-the-Job Training - Biomass sector - 1 - Up 4 years [jobs] On-the-Job Training - Biomass sector - 4 - Up 4 years [jobs] On-the-Job Training - Biomass sector - 5,066 - S,387 - S,981 - S,981 - S,988 - S, | | | | | | | | |
| Dn-Site or In-Plant Training - Wind sector | | | 50,279 | 86,466 | 145,842 | 188,079 | 241,280 | 336,605 |
| - 4 to 10 years (jobs) On-Site or In-Plant Training - Wind sector - None (jobs) On-Site or In-Plant Training - Wind sector - Over 10 years (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - Wind sector - Ver 10 years (jobs) On-Site or In-Plant Training - CO2 sector - Ver 10 On-Site or In-Plant Training - CO2 sector - Ver 10 On-Site or In-Plant Training - CO2 sector - Ver 10 On-Site or In-Plant Training - CO2 sector - Ver 10 On-Site - Ver 10 | | | | | | | | |
| On-Site or In-Plant Training - Wind sector | | | 17,516 | 30,496 | 51,680 | 70,775 | 93,888 | 130,879 |
| None (jobs On-Site or In-Plant Training - Wind sector 2,563 4,426 7,487 9,797 12,690 17, | - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Wind sector | On-Site or In-Plant Training - Wind sector | | 55,538 | 95,944 | 162,639 | 210,445 | 271,296 | 380,616 |
| Over 10 years (jobs) | | | | | | | | |
| On-Site or In-Plant Training - Wind sector | On-Site or In-Plant Training - Wind sector | | 2,563 | 4,426 | 7,487 | 9,797 | 12,690 | 17,742 |
| - Up to 1 year (jobs) On-the-Job Training - All sectors - 1 to 4 years (jobs) On-the-Job Training - All sectors - 4 to 10 years (jobs) On-the-Job Training - All sectors - 4 to 10 years (jobs) On-the-Job Training - All sectors - None (jobs) On-the-Job Training - All sectors - None (jobs) On-the-Job Training - All sectors - Over 10 On-the-Job Training - All sectors - Up to 1 years (jobs) On-the-Job Training - Biomass sector - 1 to 4 years (jobs) On-the-Job Training - Biomass sector - 4 to 10 years (jobs) On-the-Job Training - Biomass sector - 5,066 On-the-Job Training - CO2 sector - 1 to 4 On-the-Job Training - CO2 sector - 1 to 4 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - CO2 sector - 1 to 0 On-the-Job Training - C | | | | | | | | |
| On-the-Job Training - All sectors - 1 to 4 618,296 714,244 961,804 1,093,576 1,350,249 1,838, years (jobs) On-the-Job Training - All sectors - 4 to 10 176,961 205,039 280,398 331,116 416,603 572,600 | On-Site or In-Plant Training - Wind sector | | 194,101 | 334,160 | 565,164 | 722,779 | 924,688 | 1,295,584 |
| vears (jobs) 0n-the-Job Training - All sectors - 4 to 10 176,961 205,039 280,398 331,116 416,603 572,00 vears (jobs) 0n-the-Job Training - All sectors - None (jobs) 169,235 192,437 253,227 282,712 345,779 470, 470, 470, 470, 470, 470, 470, 470, | | | | | | | | |
| On-the-Job Training - All sectors - 4 to 10 176,961 205,039 280,398 331,116 416,603 572,1 years (jobs) On-the-Job Training - All sectors - None (jobs) 169,235 192,437 253,227 282,712 345,779 470, (jobs) On-the-Job Training - All sectors - Over 10 30,947 36,394 48,635 53,200 64,096 85, years (jobs) On-the-Job Training - All sectors - Up to 1 year (jobs) On-the-Job Training - Biomass sector - 1 8,979 9,877 12,031 13,677 16,440 30, to 4 years (jobs) On-the-Job Training - Biomass sector - 4 2,054 2,258 2,913 3,534 4,432 8,4 10 (years (jobs) On-the-Job Training - Biomass sector - 5,066 5,387 5,981 6,164 6,923 12,8 10 (years (jobs) On-the-Job Training - Biomass sector - 586 619 708 722 796 1,0 708 722 796 1,0 708 722 796 1,0 708 722 796 1,0 708 728 728 708 728 728 738 748 7 | On-the-Job Training - All sectors - 1 to 4 | | 618,296 | 714,244 | 961,804 | 1,093,576 | 1,350,249 | 1,838,355 |
| Vears (jobs) | years (jobs) | | | | | | | |
| Vears (jobs) | | | 176,961 | 205,039 | 280,398 | 331,116 | 416,603 | 572,624 |
| On-the-Job Training - All sectors - None 169,235 192,437 253,227 282,712 345,779 470, (jobs) On-the-Job Training - All sectors - Over 10 30,947 36,394 48,635 53,200 64,096 85, vears (jobs) On-the-Job Training - All sectors - Up to 1 2,061,750 2,363,671 3,134,544 3,486,479 4,251,206 5,763; vear (jobs) On-the-Job Training - Biomass sector - 1 8,979 9,877 12,031 13,677 16,440 30; to 4 years (jobs) On-the-Job Training - Biomass sector - 4 2,054 2,258 2,913 3,534 4,432 8,4 to 10 years (jobs) On-the-Job Training - Biomass sector - 5,066 5,387 5,981 6,164 6,923 12,8 (10,948) On-the-Job Training - Biomass sector - Up 0,000 0,0 | years (jobs) | | | | | | | |
| Comparison Com | | | 169,235 | 192,437 | 253,227 | 282,712 | 345,779 | 470,199 |
| On-the-Job Training - All sectors - Over 10 years (jobs) 30,947 36,394 48,635 53,200 64,096 85, years (jobs) On-the-Job Training - All sectors - Up to 1 year (jobs) 2,061,750 2,363,671 3,134,544 3,486,479 4,251,206 5,763,763,763,763,7763,7763,7763,7763,77 | | | , | , | | | , | |
| Vears (jobs) | | | 30,947 | 36,394 | 48,635 | 53,200 | 64,096 | 85,918 |
| On-the-Job Training - All sectors - Up to 1 year (jobs) | = | | , | , | | | , | |
| year (jobs) 8,979 9,877 12,031 13,677 16,440 30,70 to 4 years (jobs) 0n-the-Job Training - Biomass sector - 4 2,054 2,258 2,913 3,534 4,432 8,67 On-the-Job Training - Biomass sector - None (jobs) 5,066 5,387 5,981 6,164 6,923 12,87 On-the-Job Training - Biomass sector - Over 10 years (jobs) 586 619 708 722 796 1,70 On-the-Job Training - Biomass sector - Up to 10 years (jobs) 64,933 71,327 81,346 81,677 88,415 158,415 On-the-Job Training - C02 sector - 1 to 4 years (jobs) 0 0.002 0.002 0.003 0.004 0.00 On-the-Job Training - C02 sector - 4 to 10 years (jobs) 0 0.001 0.00 | | | 2.061.750 | 2,363,671 | 3.134.544 | 3.486.479 | 4.251.206 | 5,763,728 |
| On-the-Job Training - Biomass sector - 1 to 4 years (jobs) 8,979 9,877 12,031 13,677 16,440 30, 10,44 | | | , , | ,,- | _, _ ,- | _,, | , -, | |
| to 4 years (jobs) 2,054 2,258 2,913 3,534 4,432 8,4 to 10 years (jobs) On-the-Job Training - Biomass sector - None (jobs) 5,066 5,387 5,981 6,164 6,923 12,8 to 10,924 7,981 1,981 1,982 7,981 1,982 1,992 1,992 7,981 1,982 1,992 <td></td> <td></td> <td>8.979</td> <td>9,877</td> <td>12.031</td> <td>13.677</td> <td>16,440</td> <td>30,702</td> | | | 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 8,4 to 10 years (jobs) On-the-Job Training - Biomass sector - None (jobs) 5,066 5,387 5,981 6,164 6,923 12,8 to 12,8 | | | | ., | , | , | 10,110 | |
| to 10 years (jobs) 5,066 5,387 5,981 6,164 6,923 12,8 None (jobs) 5,066 5,387 5,981 6,164 6,923 12,8 On-the-Job Training - Biomass sector - Over 10 years (jobs) 586 619 708 722 796 1, On-the-Job Training - Biomass sector - Up to 1 years (jobs) 64,933 71,327 81,346 81,677 88,415 158, On-the-Job Training - C02 sector - 1 to 4 years (jobs) 0 0.002 0.002 0.003 0.004 0.0 On-the-Job Training - C02 sector - 4 to 10 years (jobs) 0 0.001 <t< td=""><td></td><td></td><td>2.054</td><td>2.258</td><td>2,913</td><td>3,534</td><td>4,432</td><td>8,465</td></t<> | | | 2.054 | 2.258 | 2,913 | 3,534 | 4,432 | 8,465 |
| On-the-Job Training - Biomass sector - None (jobs) 5,066 5,387 5,981 6,164 6,923 12,8 On-the-Job Training - Biomass sector - Over 10 years (jobs) 586 619 708 722 796 1,0 On-the-Job Training - Biomass sector - Up to 1 year (jobs) 64,933 71,327 81,346 81,677 88,415 158,7 On-the-Job Training - C02 sector - 1 to 4 years (jobs) 0 0.002 0.002 0.003 0.004 0.0 On-the-Job Training - C02 sector - 4 to 10 years (jobs) 0 0.001 | | | _,00. | _, | _,, | 0,00 | ., .== | 0,100 |
| None (jobs) 586 619 708 722 796 1, 0ver 10 years (jobs) On-the-Job Training - Biomass sector - Up to 1 year (jobs) 64,933 71,327 81,346 81,677 88,415 158,7 to 1 year (jobs) On-the-Job Training - C02 sector - 1 to 4 years (jobs) 0 0.002 0.002 0.003 0.004 0.00 years (jobs) On-the-Job Training - C02 sector - 4 to 10 years (jobs) 0 0.001 0.0 | | | 5.066 | 5 387 | 5 981 | 6 164 | 6 923 | 12,884 |
| On-the-Job Training - Biomass sector - Over 10 years (jobs) 586 619 708 722 796 1, 0ver 10 years (jobs) On-the-Job Training - Biomass sector - Up to 1 year (jobs) 64,933 71,327 81,346 81,677 88,415 158, 158, 158, 158, 158, 158, 158, 158, | _ | | 0,000 | 0,001 | 0,701 | 0,10 1 | 0,720 | 12,00 |
| Over 10 years (jobs) 64,933 71,327 81,346 81,677 88,415 158,7 to 1 year (jobs) 0 0.002 0.002 0.003 0.004 0.0 On-the-Job Training - C02 sector - 1 to 4 years (jobs) 0 0.001< | | | 586 | 619 | 708 | 722 | 796 | 1,521 |
| On-the-Job Training - Biomass sector - Up to 1 year (jobs) 64,933 71,327 81,346 81,677 88,415 158, 158, 158, 158, 158, 158, 158, 158, | | | 000 | 017 | 100 | 122 | 170 | 1,021 |
| to 1 year (jobs) On-the-Job Training - CO2 sector - 1 to 4 years (jobs) On-the-Job Training - CO2 sector - 4 to 10 years (jobs) On-the-Job Training - CO2 sector - None (jobs) On-the-Job Training - CO2 sector - Over 10 years (jobs) On-the-Job Training - CO2 sector - Over 10 years (jobs) On-the-Job Training - CO2 sector - Up to 1 year (jobs) | | | 6/, 933 | 71 327 | 813/.6 | 81 677 | 88 /15 | 158,798 |
| On-the-Job Training - CO2 sector - 1 to 4 years (jobs) 0 0.002 0.002 0.003 0.004 0.004 years (jobs) On-the-Job Training - CO2 sector - 4 to 10 years (jobs) 0 0.001 | | | 04,733 | 11,021 | 01,540 | 01,011 | 00,413 | 130,170 |
| years (jobs) 0n-the-Job Training - CO2 sector - 4 to 10 years (jobs) 0 0.001 0.00 | | | 0 | 0.002 | 0.002 | 0.003 | 0.00% | 0.002 |
| On-the-Job Training - CO2 sector - 4 to 10 years (jobs) 0 0.001 <th< td=""><td></td><td></td><td></td><td>0.002</td><td>0.002</td><td>0.003</td><td>0.004</td><td>0.002</td></th<> | | | | 0.002 | 0.002 | 0.003 | 0.004 | 0.002 |
| years (jobs) 0 0.001 | | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| On-the-Job Training - CO2 sector - None (jobs) 0 0.001 <td>9</td> <td></td> <td> "</td> <td>0.001</td> <td>0.001</td> <td>0.001</td> <td>0.001</td> <td>0.001</td> | 9 | | " | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| (jobs) 0n-the-Job Training - CO2 sector - Over 0 0 0 0 0 10 years (jobs) 0n-the-Job Training - CO2 sector - Up to 1 year (jobs) 0.001 0.009 0.008 0.011 0.014 0.009 | | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| On-the-Job Training - CO2 sector - Over 0 0 0 0 0 10 years (jobs) 0.001 0.009 0.008 0.011 0.014 0.0 year (jobs) 0.001 0.009 0.008 0.011 0.014 0.0 | = | | " | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| 10 years (jobs) | | | | | | 0 | | |
| On-the-Job Training - CO2 sector - Up to 1 0.001 0.009 0.008 0.011 0.014 0.009 0.008 | | | U | U | U | U | U | 0 |
| year (jobs) | | | 0.001 | 0.000 | 0.000 | 0.011 | 0.01/ | 0.000 |
| | | | 0.001 | 0.009 | 0.008 | 0.011 | 0.014 | 0.008 |
| On-the-Joh Training - Coal sector - 1 to Δ Δ ΜΔ 1898 1635 1763 | | | 47.500 | | 1.000 | | 1110 | 1011 |
| | _ | | 14,738 | 4,014 | 1,898 | 1,635 | 1,463 | 1,211 |
| years (jobs) | | | | | | | | |
| | | | 4,330 | 1,125 | 419 | 357 | 316 | 258 |
| years (jobs) | | | | | | | | |
| | 4 | | 3,704 | 973 | 503 | 441 | 401 | 336 |
| (jobs) | 9 , | | | | | | | |
| | | | 500 | 139 | 70 | 62.4 | 57.8 | 49.6 |
| 10 years (jobs) | 10 years (jobs) | | | | | | | |

Table 48: E+RE+ scenario - IMPACTS - Jobs (continued)

| On-the-Job Training - Coal sector - Up to 1 51,515 14,229 7,928 6,850 6,142 5,08 vear (jobs) On-the-Job Training - Grid sector - 1 to 4 129,672 175,615 301,662 404,707 560,517 813,61 vears (jobs) On-the-Job Training - Grid sector - 4 to 10 44,070 59,739 102,707 137,912 191,172 277,725 vears (jobs) On-the-Job Training - Grid sector - None 28,251 38,178 65,446 87,631 121,147 175,545 (jobs) On-the-Job Training - Grid sector - Over 4,626 6,272 10,786 14,487 20,089 29,196 10 years (jobs) On-the-Job Training - Grid sector - Up to 1 370,636 501,373 860,284 1,152,958 1,595,290 2,313,51 year (jobs) On-the-Job Training - Natural gas sector - 110,4 years (jobs) On-the-Job Training - Natural gas sector - 38,459 31,003 23,091 19,510 13,659 11,015 4 to 10 years (jobs) On-the-Job Training - Natural gas sector - 28,179 22,136 15,903 12,710 8,434 6,25 None (jobs) On-the-Job Training - Natural gas sector - 5,129 4,071 2,940 2,350 1,565 1,166 No-the-Job Training - Natural gas sector - 5,129 4,071 2,940 2,350 1,565 1,166 No-the-Job Training - Natural gas sector - 5,129 4,071 2,940 2,350 1,565 1,166 No-the-Job Training - Nuclear sector - 1 to 4 years (jobs) On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) On-the-Job Training - Nuclear sector - 4 2,332 2,239 1,663 1,138 679 197 10 years (jobs) On-the-Job Training - Nuclear sector - 520 499 371 254 152 42,8 150 10 years (jobs) On-the-Job Training - Nuclear sector - 520 499 371 254 152 42,8 150 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - 10 years (jobs) On-the-Job Training - 10 years (jobs) On-the-Job Training - 10 years (jobs) On-the-Job | Table 48: E+RE+ scenario - IMPACTS - Jobs | s (continue | - | | | | | |
|--|---|-------------|----------|----------------------|---------|-----------|-----------|-----------|
| vear (jobs) | | 2020 | 2025 | 2030 | | | 2045 | 2050 |
| Dn-the-Job Training - Grid sector - 1 to 4 years (jobs) Dn-the-Job Training - Grid sector - 4 to 10 years (jobs) Dn-the-Job Training - Grid sector - 4 to 10 years (jobs) Dn-the-Job Training - Grid sector - 4 to 10 years (jobs) Dn-the-Job Training - Grid sector - Over Dn-the-Job Training - Grid sector - Over Dn-the-Job Training - Grid sector - Over Dn-the-Job Training - Grid sector - Up to 1 Sn-the-Job Training - Grid sector - Up to 1 Sn-the-Job Training - Grid sector - Up to 1 Sn-the-Job Training - Grid sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Natural gas sector - Up to 1 Sn-the-Job Training - Nuclear sector - Up to 1 Sn-the-Job Training - Nuclear sector - Up to 1 Sn-the-Job Training - Nuclear sector - Up to 1 Sn-the-Job Training - Nuclear sector - Up Sn-the-Job Training - Nuclear sector - Up Sn-the-Job Training - Up to 1 Sn-the-Job Training - Up to 1 | | | 51,515 | 14,229 | 7,928 | 6,850 | 6,142 | 5,081 |
| vears (jobs) | | | | | | | | |
| Dn-the-Job Training - Grid sector - 4 to 10 44,070 59,739 102,707 137,912 191,172 277,725 | | | 129,672 | 175,615 | 301,662 | 404,707 | 560,517 | 813,611 |
| vears (jobs) | | | | | | | | |
| Dn-the-Job Training - Grid sector - None (jobs) Dn-the-Job Training - Grid sector - Over (Joyans (jobs) Dn-the-Job Training - Grid sector - Over (Joyans (jobs) Dn-the-Job Training - Grid sector - Up to 1 (Joyans (jobs) Dn-the-Job Training - Grid sector - Up to 1 (Joyans (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natural gas sector - Ito 4 years (jobs) Dn-the-Job Training - Natlear sector - Ito 4 years (jobs) Dn-the-Job Training - Natlear sector - Ito 4 years (jobs) Dn-the-Job Training - Natlear sector - Ito 4 years (jobs) Dn-the-Job Training - Natlear sector - Ito 4 years (jobs) Dn-the-Job Training - Natlear sector - Ito 4 years (jobs) Dn-the-Job Training - Itolear sector - Itole - Itole - Itole - Itolear (jobs) Dn-the-Job Training - Itolear sector - Itole - Itolear (jobs) Dn-the-Job Training - Itolear sector - Itole - Itolear (jobs) Dn-the-Job Training - Itolear Sector - Itolear (jobs) Dn-the-Job Training - Itolear Sector - Itolear (jobs) Dn-the-Job Training - Itolear Sector - Itolear - Itole | 9 | | 44,070 | 59,739 | 102,707 | 137,912 | 191,172 | 277,729 |
| (jobs) On-the-Job Training - Grid sector - Over 4,626 6,272 10,786 14,487 20,089 29,196 10 years (jobs) On-the-Job Training - Grid sector - Up to 1 year (jobs) 370,636 501,373 860,284 1,152,958 1,595,290 2,313,51 year (jobs) On-the-Job Training - Natural gas sector - 119,696 95,608 70,226 57,982 39,688 30,846 10 years (jobs) On-the-Job Training - Natural gas sector - 28,179 22,136 15,903 12,710 8,434 6,25 None (jobs) On-the-Job Training - Natural gas sector - 28,179 22,136 15,903 12,710 8,434 6,25 On-the-Job Training - Natural gas sector - 34,610 276,866 201,297 162,788 108,882 81,000 10 years (jobs) On-the-Job Training - Natural gas sector - 10 years (jobs) On-the-Job Training - Natural gas sector - 10 years (jobs) On-the-Job Training - Natural gas sector - 10 years (jobs) On-the-Job Training - Natural gas sector - 10 years (jobs) On-the-Job Training - Natural gas sector - 10 years (jobs) On-the-Job Training - Natural gas sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - Nuclear sector - 10 years (jobs) On-the-Job Training - 10 year (jobs) On-the-Job Training - 10 years (jobs) On-the-Job Training - 10 | | | | | | | | |
| On-the-Job Training - Grid sector - Over 4,626 6,272 10,786 14,487 20,089 29,196 10 years (jobs) 370,636 501,373 860,284 1,152,958 1,595,290 2,313,51 year (jobs) 70-the-Job Training - Natural gas sector - 119,696 95,608 70,226 57,982 39,688 30,846 110,4 years (jobs) 70-the-Job Training - Natural gas sector - 28,179 22,136 15,903 12,710 8,434 6,25 70,000 70-the-Job Training - Natural gas sector - 28,179 22,136 15,903 12,710 8,434 6,25 70,000 70-the-Job Training - Natural gas sector - 28,179 22,136 15,903 12,710 8,434 6,25 70-the-Job Training - Natural gas sector - 5,129 4,071 2,940 2,350 1,565 1,166 70-the-Job Training - Natural gas sector - 348,610 276,866 201,297 162,788 108,882 81,003 70-the-Job Training - Nuclear sector - 1 to 4 years (jobs) 70-the-Job Training - Nuclear sector - 1 to 4 years (jobs) 70-the-Job Training - Nuclear sector - 20,000 70-the-Job Training - Nuclear sector - 3,354 3,216 2,385 1,630 971 273 70-the-Job Training - Nuclear sector - 5,20 499 371 254 152 42,300 70-the-Job Training - Nuclear sector - 5,20 499 371 254 152 42,300 70-the-Job Training - Nuclear sector - 5,20 499 371 254 152 42,300 70-the-Job Training - Nuclear sector - 5,335 34,063 32,660 24,223 16,554 9,863 2,777 70-the-Job Training - Nuclear sector - 10 years (jobs) 70-the-Job Training - Nuclear sector - 10 years (jobs) 70-the-Job Training - 0il sector - 1 to 4 48,074 41,427 34,202 22,869 14,003 2,203 70-the-Job Training - 0il sector - 0 years (jobs) 77,14 6,774 5,705 3,886 2,427 397 70-the-Job Training - 0il sector - 0 years (jobs) 77,14 6,774 5,705 3,886 2,427 397 70-the-Job Training - 0il sector - 1 to 1 77,14 6,774 5,705 3,886 2,427 397 70-the-Job Training - 0il sector - 1 70-the-Job Training - 0il sector - 1 70-the-Job Training - 0il sector - 1 70-the-Job Training - 50lar PV sector - | = | | 28,251 | 38,178 | 65,446 | 87,631 | 121,147 | 175,548 |
| 10 years (jobs) | 9 , | | | | | | | |
| On-the-Job Training - Grid sector - Up to 1 370,636 501,373 860,284 1,152,958 1,595,290 2,313,51 year (jobs) On-the-Job Training - Natural gas sector - 119,696 95,608 70,226 57,982 39,688 30,844 1 to 4 years (jobs) On-the-Job Training - Natural gas sector - 38,459 31,003 23,091 19,510 13,659 11,015 4 to 10 years (jobs) On-the-Job Training - Natural gas sector - 28,179 22,136 15,903 12,710 8,434 6,25 None (jobs) On-the-Job Training - Natural gas sector - 5,129 4,071 2,940 2,350 1,565 1,166 On-the-Job Training - Natural gas sector - 348,610 276,866 201,297 162,788 108,882 81,003 Up to 1 years (jobs) On-the-Job Training - Nuclear sector - 1 to 9,668 9,283 6,895 4,718 2,815 794 4 years (jobs) On-the-Job Training - Nuclear sector - 4 2,332 2,239 1,663 1,138 679 197 to 10 years (jobs) On-the-Job Training - Nuclear sector - 3,354 3,216 2,385 1,630 971 277 None (jobs) On-the-Job Training - Nuclear sector - 520 499 371 254 152 42,8 On-the-Job Training - Nuclear sector - 520 499 371 254 152 42,8 On-the-Job Training - Nuclear sector - 520 499 371 254 152 42,8 On-the-Job Training - Oil sector - 1 to 4 144,018 126,388 106,403 72,405 45,178 7,321 On-the-Job Training - Oil sector - 1 to 4 144,018 126,388 106,403 72,405 45,178 7,321 On-the-Job Training - Oil sector - None 48,074 41,427 34,202 22,869 14,003 2,203 On-the-Job Training - Oil sector - None 48,074 41,427 34,202 22,869 14,003 2,203 On-the-Job Training - Solar PV sector - 1 127,012 182,347 275,103 295,223 371,019 516,745 On-the-Job Training - Solar PV sector - 1 127,012 182,347 275,103 295,223 371,019 516,745 On-the-Job Training - Solar PV sector - 4 34,865 49,217 74,363 82,591 104,163 146,375 On-the-Job Training - Solar PV sector - 4 34,865 49,217 | | | 4,626 | 6,272 | 10,786 | 14,487 | 20,089 | 29,196 |
| Vear (jobs) | | | | | | | | |
| On-the-Job Training - Natural gas sector - 119,696 95,608 70,226 57,982 39,688 30,848 10 4 years (jobs) On-the-Job Training - Natural gas sector - 4 to 10 years (jobs) On-the-Job Training - Natural gas sector - None (jobs) On-the-Job Training - Natural gas sector - None (jobs) On-the-Job Training - Natural gas sector - Over 10 years (jobs) On-the-Job Training - Natural gas sector - Over 10 years (jobs) On-the-Job Training - Natural gas sector - Over 10 years (jobs) On-the-Job Training - Natural gas sector - Up to 1 year (jobs) On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) On-the-Job Training - Nuclear sector - 3,354 3,216 2,385 1,630 971 273 274 274 275 | | | 370,636 | 501,373 | 860,284 | 1,152,958 | 1,595,290 | 2,313,517 |
| 1 to 4 years (jobs) | | | | | | | | |
| On-the-Job Training - Natural gas sector - 38,459 31,003 23,091 19,510 13,659 11,015 4 to 10 years (jobs) On-the-Job Training - Natural gas sector - 28,179 22,136 15,903 12,710 8,434 6,25 | | | 119,696 | 95,608 | 70,226 | 57,982 | 39,688 | 30,848 |
| 4 to 10 years (jobs) | | | | | | | | |
| On-the-Job Training - Natural gas sector - None (jobs) | | | 38,459 | 31,003 | 23,091 | 19,510 | 13,659 | 11,015 |
| None (jobs) | | | | | | | | |
| 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 - Natural gas sector - Up to 1 year (jobs) 348,610 276,866 201,297 162,788 108,882 81,003 On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) 9,668 9,283 6,895 4,718 2,815 794 4 years (jobs) 0n-the-Job Training - Nuclear sector - 4 to 10 years (jobs) 2,332 2,239 1,663 1,138 679 193 0n-the-Job Training - Nuclear sector - None (jobs) 0n-the-Job Training - Nuclear sector - 520 499 371 254 152 42.8 0n-the-Job Training - Nuclear sector - Up to 1 years (jobs) 34,063 32,660 24,223 16,554 9,863 2,77 0n-the-Job Training - Oil sector - 1 to 4 years (jobs) 144,018 126,388 106,403 72,405 45,178 7,322 0n-the-Job Training - Oil sector - 4 to 10 years (jobs) 34,014 30,133 25,578 17,598 11,082 1,779 0n-the-Job Training - Oil sector - None (jobs) 7,714 | = = = | | 28,179 | 22,136 | 15,903 | 12,710 | 8,434 | 6,257 |
| Over 10 years (jobs) 348,610 276,866 201,297 162,788 108,882 81,000 On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) 9,668 9,283 6,895 4,718 2,815 794 4 years (jobs) 0n-the-Job Training - Nuclear sector - 4 to 10 years (jobs) 2,332 2,239 1,663 1,138 679 195 0n-the-Job Training - Nuclear sector - 3,354 3,216 2,385 1,630 971 273 None (jobs) 0n-the-Job Training - Nuclear sector - 10 years (jobs) 520 499 371 254 152 42.8 0n-the-Job Training - Nuclear sector - Up to 1 year (jobs) 34,063 32,660 24,223 16,554 9,863 2,77 to 1 year (jobs) 0n-the-Job Training - Oil sector - 1 to 4 144,018 126,388 106,403 72,405 45,178 7,322 years (jobs) 0n-the-Job Training - Oil sector - 4 to 10 34,014 30,133 25,578 17,598 11,082 1,776 years (jobs) 0n-the-Job Training - Oil sector - None (jobs) 7,714 6,774 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<> | | | | | | | | |
| 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 - Nuclear sector - 1 to 4 years (jobs) 9,668 9,283 6,895 4,718 2,815 794 On-the-Job Training - Nuclear sector - 4 to 10 years (jobs) 2,332 2,239 1,663 1,138 679 193 On-the-Job Training - Nuclear sector - None (jobs) 3,354 3,216 2,385 1,630 971 273 On-the-Job Training - Nuclear sector - Over 10 years (jobs) 520 499 371 254 152 42.8 On-the-Job Training - Nuclear sector - Up to 1 year (jobs) 34,063 32,660 24,223 16,554 9,863 2,77 to 1 year (jobs) 0n-the-Job Training - Oil sector - 1 to 4 144,018 126,388 106,403 72,405 45,178 7,327 years (jobs) 0n-the-Job Training - Oil sector - 4 to 10 34,014 30,133 25,578 17,598 11,082 1,776 years (jobs) 0n-the-Job Training - Oil sector - Over 10 7,714 6,774 | | | 5,129 | 4,071 | 2,940 | 2,350 | 1,565 | 1,166 |
| Up to 1 year (jobs) On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) On-the-Job Training - Nuclear sector - Up to 1 year (jobs) On-the-Job Training - Oil sector - 4 to 10 years (jobs) On-the-Job Training - Oil sector - None (jobs) On-the-Job Training - Oil sector - Up to 1 years (jobs) On-the-Job Training - Oil sector - Up to 1 years (jobs) On-the-Job Training - Oil sector - Up to 1 years (jobs) On-the-Job Training - Oil sector - Up to 1 years (jobs) On-the-Job Training - Oil sector - Up to 1 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Oil sector - Vore 10 years (jobs) On-the-Job Training - Solar PV sector - 1 127,012 182,347 275,103 295,223 371,019 516,744 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) | | | | | | | | |
| On-the-Job Training - Nuclear sector - 1 to 4 years (jobs) | On-the-Job Training - Natural gas sector - | | 348,610 | 276,866 | 201,297 | 162,788 | 108,882 | 81,003 |
| 4 years (jobs) 0n-the-Job Training - Nuclear sector - 4 to 10 years (jobs) 2,332 2,239 1,663 1,138 679 199 to 10 years (jobs) 0n-the-Job Training - Nuclear sector - None (jobs) 3,354 3,216 2,385 1,630 971 273 years (jobs) 0n-the-Job Training - Nuclear sector - Over 10 years (jobs) 520 499 371 254 152 42.8 years (jobs) 0n-the-Job Training - Nuclear sector - Up to 1 year (jobs) 34,063 32,660 24,223 16,554 9,863 2,77 0n-the-Job Training - Oil sector - 1 to 4 years (jobs) 144,018 126,388 106,403 72,405 45,178 7,322 0n-the-Job Training - Oil sector - 4 to 10 years (jobs) 34,014 30,133 25,578 17,598 11,082 1,776 0n-the-Job Training - Oil sector - None (jobs) 48,074 41,427 34,202 22,869 14,003 2,203 0n-the-Job Training - Oil sector - Over 10 years (jobs) 7,714 6,774 5,705 3,886 2,427 393 0n-the-Job Training - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347< | | | | | | | | |
| On-the-Job Training - Nuclear sector - 4 2,332 2,239 1,663 1,138 679 192 192 193 193 194 194 195 1 | On-the-Job Training - Nuclear sector - 1 to | | 9,668 | 9,283 | 6,895 | 4,718 | 2,815 | 794 |
| to 10 years (jobs) On-the-Job Training - Nuclear sector - | 4 years (jobs) | | | | | | | |
| On-the-Job Training - Nuclear sector - None (jobs) 3,354 3,216 2,385 1,630 971 273 On-the-Job Training - Nuclear sector - Over 10 years (jobs) 520 499 371 254 152 42.8 On-the-Job Training - Nuclear sector - Up to 1 year (jobs) 34,063 32,660 24,223 16,554 9,863 2,77 On-the-Job Training - Oil sector - 1 to 4 years (jobs) 144,018 126,388 106,403 72,405 45,178 7,322 years (jobs) 0n-the-Job Training - Oil sector - 4 to 10 34,014 30,133 25,578 17,598 11,082 1,779 years (jobs) 0n-the-Job Training - Oil sector - None (jobs) 48,074 41,427 34,202 22,869 14,003 2,203 years (jobs) 0n-the-Job Training - Oil sector - Over 10 7,714 6,774 5,705 3,886 2,427 39,99 year (jobs) 0n-the-Job Training - Solar PV sector - 1 127,012 182,347 275,103 295,223 371,019 516,745 to 4 years (jobs) 0n-the-Job Training - Solar PV sector - 4 | On-the-Job Training - Nuclear sector - 4 | | 2,332 | 2,239 | 1,663 | 1,138 | 679 | 192 |
| None (jobs) | to 10 years (jobs) | | | | | | | |
| None (jobs) | | | 3,354 | 3,216 | 2,385 | 1,630 | 971 | 273 |
| On-the-Job Training - Nuclear sector - Over 10 years (jobs) 520 499 371 254 152 42.8 Over 10 years (jobs) 34,063 32,660 24,223 16,554 9,863 2,77 to 1 year (jobs) 10,554 9,863 2,77 45,178 7,322 years (jobs) 144,018 126,388 106,403 72,405 45,178 7,322 years (jobs) 10-the-Job Training - Oil sector - 4 to 10 34,014 30,133 25,578 17,598 11,082 1,779 10-the-Job Training - Oil sector - None (jobs) 48,074 41,427 34,202 22,869 14,003 2,203 10-the-Job Training - Oil sector - Over 10 years (jobs) 7,714 6,774 5,705 3,886 2,427 392 year (jobs) 10-the-Job Training - Oil sector - Up to 1 years (jobs) 556,332 486,861 408,582 277,346 172,564 27,863 year (jobs) 10-the-Job Training - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,745 | None (jobs) | | | | | | | |
| Over 10 years (jobs) 34,063 32,660 24,223 16,554 9,863 2,77 to 1 year (jobs) 0n-the-Job Training - Oil sector - 1 to 4 years (jobs) 144,018 126,388 106,403 72,405 45,178 7,322 years (jobs) 0n-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 - None (jobs) 48,074 41,427 34,202 22,869 14,003 2,203 (jobs) 0n-the-Job Training - Oil sector - Over 10 years (jobs) 7,714 6,774 5,705 3,886 2,427 393 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 - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,746 On the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,376 On-the-Job Training - Solar PV sector - 35,086 5 | | | 520 | 499 | 371 | 254 | 152 | 42.8 |
| On-the-Job Training - Nuclear sector - Up to 1 year (jobs) 34,063 32,660 24,223 16,554 9,863 2,77 0n-the-Job Training - Oil sector - 1 to 4 years (jobs) 144,018 126,388 106,403 72,405 45,178 7,322 0n-the-Job Training - Oil sector - 4 to 10 years (jobs) 34,014 30,133 25,578 17,598 11,082 1,779 0n-the-Job Training - Oil sector - None (jobs) 48,074 41,427 34,202 22,869 14,003 2,203 (jobs) 7,714 6,774 5,705 3,886 2,427 393 years (jobs) 7,714 6,774 5,705 3,886 2,427 393 year (jobs) 7,714 6,774 5,705 3,886 2,427 393 year (jobs) 7,714 6,774 5,705 3,886 2,427 393 year (jobs) 7,714 6,774 5,705 3,886 2,727 34,865 0n-the-Job Training - Solar PV sector - 1 127,012 182,347 275,103 295,223 371,019 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> | | | | | | | | |
| to 1 year (jobs) On-the-Job Training - Oil sector - 1 to 4 years (jobs) On-the-Job Training - Oil sector - 4 to 10 years (jobs) On-the-Job Training - Oil sector - 8 to 10 years (jobs) On-the-Job Training - Oil sector - 8 to 10 years (jobs) On-the-Job Training - Oil sector - 8 to 10 years (jobs) On-the-Job Training - Oil sector - 9 to 10 years (jobs) On-the-Job Training - Oil sector - 10 years (jobs) On-the-Job Training - Oil sector - 10 years (jobs) On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 35,086 | | | 34,063 | 32,660 | 24,223 | 16,554 | 9,863 | 2,777 |
| On-the-Job Training - Oil sector - 1 to 4 years (jobs) 144,018 126,388 106,403 72,405 45,178 7,322 years (jobs) On-the-Job Training - Oil sector - 4 to 10 years (jobs) 34,014 30,133 25,578 17,598 11,082 1,779 years (jobs) On-the-Job Training - Oil sector - None (jobs) 48,074 41,427 34,202 22,869 14,003 2,203 years (jobs) On-the-Job Training - Oil sector - Over 10 years (jobs) 7,714 6,774 5,705 3,886 2,427 393 years (jobs) On-the-Job Training - Oil sector - Up to 1 years (jobs) 556,332 486,861 408,582 277,346 172,564 27,863 years (jobs) On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,749 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 years (jobs) On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | , | | | • | | |
| years (jobs) 34,014 30,133 25,578 17,598 11,082 1,779 years (jobs) 0n-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 - Over 10 years (jobs) 7,714 6,774 5,705 3,886 2,427 392 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 - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,746 On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | 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 - None (jobs) 48,074 41,427 34,202 22,869 14,003 2,203 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 - Oil sector - Up to 1 year (jobs) 556,332 486,861 408,582 277,346 172,564 27,863 On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,746 On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | = | | , | -, | | , | | ,- |
| years (jobs) 48,074 41,427 34,202 22,869 14,003 2,203 (jobs) 0n-the-Job Training - Oil sector - Over 10 years (jobs) 7,714 6,774 5,705 3,886 2,427 393 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 - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,745 On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | 34.014 | 30.133 | 25.578 | 17.598 | 11.082 | 1,779 |
| 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 - Over 10 years (jobs) 7,714 6,774 5,705 3,886 2,427 393 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 - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,745 On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | 9 | | 0 .,0 | 337.33 | | ,070 | ,002 | .,, |
| (jobs) 7,714 6,774 5,705 3,886 2,427 392 (2,427) years (jobs) 0n-the-Job Training - Oil sector - Up to 1 (2) (2) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4 | | | 48.074 | 41.427 | 34.202 | 22.869 | 14.003 | 2,203 |
| On-the-Job Training - Oil sector - Over 10 years (jobs) 7,714 6,774 5,705 3,886 2,427 392 years (jobs) On-the-Job Training - Oil sector - Up to 1 year (jobs) 556,332 486,861 408,582 277,346 172,564 27,863 years (jobs) On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,749 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 years (jobs) On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | = | | , | , | , | ,_, | , | _, |
| years (jobs) 556,332 486,861 408,582 277,346 172,564 27,863 year (jobs) 0n-the-Job Training - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,749 0n-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 0n-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | 7.714 | 6.774 | 5.705 | 3.886 | 2.427 | 392 |
| 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 - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,749 On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | ., | 0,114 | 0,100 | 0,000 | 2,721 | 072 |
| year (jobs) 127,012 182,347 275,103 295,223 371,019 516,749 to 4 years (jobs) 0n-the-Job Training - Solar PV sector - 4 34,865 49,217 74,363 82,591 104,163 146,379 to 10 years (jobs) 0n-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | 556 332 | 486 861 | 408 582 | 277.346 | 172 564 | 27.863 |
| On-the-Job Training - Solar PV sector - 1 to 4 years (jobs) 127,012 182,347 275,103 295,223 371,019 516,749 On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | • | | 000,002 | 400,001 | 400,002 | 211,040 | 112,004 | 21,000 |
| to 4 years (jobs) On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | 127 012 | 182 347 | 275 103 | 295 223 | 371 019 | 516 749 |
| On-the-Job Training - Solar PV sector - 4 to 10 years (jobs) 34,865 49,217 74,363 82,591 104,163 146,379 On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | 121,012 | 102,041 | 210,100 | 270,220 | 311,017 | 010,147 |
| to 10 years (jobs) Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | 3/, 865 | / ₁ 9 217 | 7/, 363 | 82 501 | 107, 163 | 1/16 379 |
| On-the-Job Training - Solar PV sector - 35,086 50,776 77,297 83,961 106,609 150,156 | | | 34,003 | 47,211 | 14,505 | 02,071 | 104,103 | 140,517 |
| | | | 2E 004 | 50 774 | 77 207 | 02 041 | 104 400 | 150 154 |
| | | | 33,000 | 30,110 | 11,271 | 03,701 | 100,009 | 130,136 |
| | | | 7076 | 11 /.10 | 17.005 | 17702 | 22.07.0 | 30,143 |
| Over 10 years (jobs) | | | 1,910 | 11,410 | 11,025 | 11,193 | 22,040 | 30,143 |
| | | | /10 / 00 | / O / OF1 | 017.050 | 070.007 | 1007 707 | 1700107 |
| | | | 418,430 | 606,251 | 917,859 | 979,086 | 1,234,697 | 1,723,136 |
| to 1 year (jobs) | | | (/ 540 | 444.44.0 | 407.507 | 010000 | 040 400 | |
| | = | | 64,513 | 111,110 | 187,587 | 243,229 | 313,130 | 437,118 |
| years (jobs) | | | | | | | | |
| | | | 16,836 | 29,325 | 49,662 | 68,475 | 91,099 | 126,807 |
| 10 years (jobs) | | | | | _ | | | |
| | _ | | 17,520 | 30,343 | 51,510 | 67,305 | 87,290 | 122,541 |
| (jobs) | | | | | | | | |
| | | | 3,897 | 6,610 | 11,029 | 13,645 | 16,970 | 23,408 |
| 10 years (jobs) | 10 years (inhs) | | | | | | | |

Table 48: E+RE+ scenario - IMPACTS - Jobs (continued)

| Table 48: E+RE+ scenario - IMPACTS - Job | s (continu | edJ | | | | | |
|---|------------|-----------|-----------|-----------|-----------|------------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-the-Job Training - Wind sector - Up to | | 217,231 | 374,104 | 633,024 | 809,220 | 1,035,353 | 1,451,553 |
| 1 year (jobs) | | | | | | | |
| Related work experience - All sectors - 1 | | 1,109,104 | 1,264,286 | 1,674,545 | 1,878,001 | 2,299,966 | 3,119,060 |
| to 4 years (jobs) | | 707.000 | 000700 | 1.077.400 | 1.045.405 | 4 / 00 050 | 0.007.044 |
| Related work experience - All sectors - 4 | | 707,289 | 809,720 | 1,077,428 | 1,215,185 | 1,492,852 | 2,027,011 |
| to 10 years (jobs) | | / 00 155 | /00.000 | ////00 | 750 707 | 000 000 | 105/75/ |
| Related work experience - All sectors - | | 432,155 | 498,000 | 666,430 | 750,787 | 922,233 | 1,256,756 |
| None (jobs) Related work experience - All sectors - | | 107,000 | 225,752 | 298,693 | 331,047 | 402,870 | 543,997 |
| Over 10 years (jobs) | | 196,988 | 225,752 | 296,693 | 331,047 | 402,870 | 543,997 |
| Related work experience - All sectors - Up | | 611,652 | 714,028 | 961,513 | 1,072,062 | 1,310,012 | 1,784,001 |
| to 1 year (jobs) | | 611,652 | 114,020 | 901,513 | 1,012,062 | 1,310,012 | 1,764,001 |
| Related work experience - Biomass sector | | 24,277 | 26,997 | 31,853 | 34,825 | 40,687 | 73,929 |
| -1 to 4 years (jobs) | | 24,211 | 20,771 | 31,000 | 34,023 | 40,001 | 13,727 |
| Related work experience - Biomass sector | | 12,619 | 13,694 | 16,064 | 18,393 | 22,461 | 42,237 |
| - 4 to 10 years (jobs) | | 12,017 | 10,074 | 10,004 | 10,070 | 22,401 | 72,201 |
| Related work experience - Biomass sector | | 13,859 | 15,184 | 17,335 | 16,944 | 17,786 | 31,692 |
| - None (jobs) | | 10,007 | 10,10 | 11,000 | 10,7 1 1 | 11,100 | 0.,072 |
| Related work experience - Biomass sector | | 3,478 | 3,729 | 4,280 | 4,755 | 5,696 | 10,830 |
| - Over 10 years (jobs) | | 0, | 0,127 | 1,250 | 1,100 | 0,070 | 10,000 |
| Related work experience - Biomass sector | | 27,386 | 29,866 | 33,448 | 30,859 | 30,376 | 53,683 |
| - Up to 1 year (jobs) | | 2.,000 | | 35,115 | 00,007 | 00,0.0 | 00,000 |
| Related work experience - CO2 sector - 1 | | 0.001 | 0.005 | 0.004 | 0.006 | 0.008 | 0.004 |
| to 4 years (jobs) | | | | | 0.000 | | |
| Related work experience - CO2 sector - 4 | | 0 | 0.003 | 0.003 | 0.004 | 0.005 | 0.003 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 0 | 0.002 | 0.002 | 0.002 | 0.003 | 0.002 |
| None (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 0 | 0.002 | 0.002 | 0.003 | 0.003 | 0.002 |
| Up to 1 year (jobs) | | | | | | | |
| Related work experience - Coal sector - 1 | | 28,389 | 7,771 | 4,137 | 3,566 | 3,191 | 2,634 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - Coal sector - 4 | | 16,591 | 4,383 | 2,034 | 1,778 | 1,613 | 1,351 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - Coal sector - | | 10,136 | 2,723 | 1,346 | 1,162 | 1,042 | 862 |
| None (jobs) | | | | | | | |
| Related work experience - Coal sector - | | 4,189 | 1,141 | 561 | 493 | 449 | 379 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Coal sector - | | 15,483 | 4,463 | 2,741 | 2,347 | 2,085 | 1,710 |
| Up to 1 year (jobs) | | | | | | | |
| Related work experience - Grid sector - 1 | | 208,739 | 282,258 | 484,118 | 648,547 | 896,974 | 1,300,229 |
| to 4 years (jobs) | | 101-01 | 121 222 | 211 - 21 | | | |
| Related work experience - Grid sector - 4 | | 136,794 | 184,838 | 316,794 | 424,076 | 586,079 | 848,922 |
| to 10 years (jobs) | | 05.700 | 44 (44 (| 100 / 5 / | 0.7500 | 070 500 | 507044 |
| Related work experience - Grid sector - | | 85,739 | 116,116 | 199,454 | 267,580 | 370,589 | 537,911 |
| None (jobs) | | 05 / 57 | /700/ | 00.007 | 110.107 | 150.057 | 000 (71 |
| Related work experience - Grid sector - | | 35,457 | 47,936 | 82,204 | 110,106 | 152,256 | 220,671 |
| Over 10 years (jobs) | | 110 500 | 150,000 | 050.015 | 0./7.007 | / 00 01/ | 701.070 |
| Related work experience - Grid sector - | | 110,528 | 150,029 | 258,315 | 347,387 | 482,316 | 701,869 |
| Up to 1 year (jobs) | | 100.017 | 150 500 | 115 507 | 02.000 | /0.100 | 1.7 1 0 1 |
| Related work experience - Natural gas | | 199,314 | 158,500 | 115,534 | 93,908 | 63,139 | 47,424 |
| sector - 1 to 4 years (jobs) | | 100 /10 | 105 500 | 77455 | /0.100 | / 0.010 | 00.770 |
| Related work experience - Natural gas | | 132,613 | 105,533 | 77,155 | 63,183 | 42,812 | 32,649 |
| sector - 4 to 10 years (jobs) | | 70 100 | 60 / 00 | /.E 000 | 9770E | 05 770 | 10.07.0 |
| Related work experience - Natural gas | | 78,199 | 62,490 | 45,890 | 37,795 | 25,770 | 19,842 |
| sector - None (jobs) Related work experience - Natural gas | | 24.007 | 28,497 | 20 E00 | 16,500 | 10,944 | 8,038 |
| sector - Over 10 years (jobs) | | 36,004 | 20,491 | 20,599 | 10,500 | 10,744 | 0,038 |
| sector - Over 10 years (Juns) | | | l | | | | |
| | | | | | | | |

Table 48: E+RE+ scenario - IMPACTS - Jobs (continued)

| Table 40. E+KE+ Scellul IU - IMPACIS - JUL | | | | | | | |
|--|------|----------|---------|---------|---------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Related work experience - Natural gas | | 93,942 | 74,664 | 54,280 | 43,954 | 29,562 | 22,336 |
| sector - Up to 1 year (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 18,639 | 17,871 | 13,255 | 9,059 | 5,397 | 1,520 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 12,092 | 11,592 | 8,595 | 5,873 | 3,499 | 985 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 6,294 | 6,044 | 4,489 | 3,072 | 1,833 | 517 |
| - None (jobs) | | | | | • | | |
| Related work experience - Nuclear sector | | 3,722 | 3,571 | 2,650 | 1,812 | 1,080 | 304 |
| - Over 10 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 9,189 | 8,820 | 6,548 | 4,479 | 2,671 | 753 |
| - Up to 1 year (jobs) | | , - | -, | -,- | , | ,- | |
| Related work experience - Oil sector - 1 to | | 301,109 | 263,650 | 221,423 | 150,297 | 93,538 | 15,160 |
| 4 years (jobs) | | 00.,.07 | 200,000 | , | .00/27. | 70,000 | .07.00 |
| Related work experience - Oil sector - 4 to | | 182,706 | 159,719 | 133,934 | 90,747 | 56,384 | 9,131 |
| 10 years (jobs) | | .02,.00 | .07,7 | .00,70 | 70, | 33,23 . | 7,.0 |
| Related work experience - Oil sector - | | 106,478 | 93,499 | 78,696 | 53,672 | 33,526 | 5,380 |
| None (jobs) | | 100, 110 | 70, 177 | 10,070 | 00,012 | 00,020 | 0,000 |
| Related work experience - Oil sector - | | 52,545 | 45,879 | 38,462 | 26,026 | 16,169 | 2,639 |
| Over 10 years (jobs) | | 02,040 | 40,017 | 00,402 | 20,020 | 10,107 | 2,007 |
| Related work experience - Oil sector - Up | | 147,314 | 128,836 | 107,956 | 73,363 | 45,636 | 7,249 |
| to 1 year (jobs) | | 171,017 | 120,000 | 101,700 | 10,000 | 40,000 | 1,247 |
| Related work experience - Solar PV sector | | 215,901 | 312,361 | 473,727 | 509,206 | 643,629 | 901,300 |
| - 1 to 4 years (jobs) | | 213,901 | 312,301 | 413,121 | 307,200 | 043,027 | 701,300 |
| Related work experience - Solar PV sector | | 139,474 | 201,262 | 304,569 | 326,808 | 412,018 | 575,424 |
| - 4 to 10 years (jobs) | | 157,414 | 201,202 | 304,307 | 320,000 | 412,010 | 313,424 |
| Related work experience - Solar PV sector | | 87,975 | 127,078 | 192,688 | 207,571 | 262,410 | 367,716 |
| - None (jobs) | | 01,710 | 121,010 | 172,000 | 201,311 | 202,410 | 301,110 |
| Related work experience - Solar PV sector | | 40,027 | 57,947 | 87,332 | 92,037 | 115,384 | 159,820 |
| - Over 10 years (jobs) | | 40,021 | 31,741 | 01,002 | 72,001 | 113,304 | 137,020 |
| Related work experience - Solar PV sector | | 139,992 | 201,354 | 303,331 | 323,032 | 405,087 | 562,303 |
| - Up to 1 year (jobs) | | 137,772 | 201,354 | 303,331 | 323,032 | 403,061 | 302,303 |
| Related work experience - Wind sector - 1 | | 112,738 | 194,877 | 330,496 | 428,594 | 553,411 | 776,866 |
| to 4 years (jobs) | | 112,130 | 194,011 | 330,490 | 420,394 | 555,411 | 110,000 |
| | | 74,402 | 128,700 | 010 007 | 007.007 | 2/700/ | 516,311 |
| Related work experience - Wind sector - 4 to 10 years (jobs) | | 74,402 | 128,700 | 218,284 | 284,327 | 367,984 | 516,311 |
| Related work experience - Wind sector - | | /0/7/ | 7/ 0/7 | 107 500 | 1/0.001 | 000 077 | 000 007 |
| · | | 43,474 | 74,867 | 126,533 | 162,991 | 209,277 | 292,837 |
| None (jobs) | | 01.577 | 07.050 | (0 (05 | 70.000 | 100.000 | 1/1 015 |
| Related work experience - Wind sector - | | 21,566 | 37,053 | 62,605 | 79,320 | 100,892 | 141,315 |
| Over 10 years (jobs) | | (7.010 | 115.005 | 10/ 00/ | 01///0 | 040.070 | 101 000 |
| Related work experience - Wind sector - | | 67,818 | 115,995 | 194,894 | 246,642 | 312,279 | 434,098 |
| Up to 1 year (jobs) | | | | | | | |
| 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) | | 36,101 | 49,507 | 86,149 | 117,136 | 164,496 | 242,211 |
| Wage income - Natural Gas (million \$2019) | | 35,783 | 28,853 | 21,290 | 17,465 | 11,852 | 8,946 |
| Wage income - Nuclear (million \$2019) | | 3,570 | 3,505 | 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) | | 34,489 | 50,435 | 77,444 | 84,516 | 108,333 | 154,016 |
| Wage income - Wind (million \$2019) | | 18,567 | 32,583 | 56,084 | 74,464 | 98,189 | 140,114 |

Table 49: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Commercial

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

| Table 49: F+RF- : | coonanio | DTIIAD 1. | Efficiency/ | Electrification | Commonaial | (nontinued) |
|-------------------|------------|-----------|--------------|--------------------|------------|---------------|
| Table 49: F+RF- : | scenario - | PILLAR I: | ETTICIENCV/I | = lectrification - | Commercial | i continuea i |

| 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 - Fossil (%) | 3.94 | 3.28 | 0.655 | 0.028 | 0 | 0 | 0 |
| Sales of space heating units - Gas Furnace (%) | 85.2 | 70.1 | 32.1 | 5.37 | 1.07 | 0.82 | 0.817 |
| 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 Furnace (%) | 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 |

Table 50: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

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

Table 51: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| Final energy use - Residential (PJ) | 11,788 | 11,090 | 10,221 | 8,966 | 7,776 | 6,967 | 6,512 |
| Final energy use - Transportation (PJ) | 27,996 | 26,390 | 23,464 | 19,872 | 16,608 | 14,565 | 13,649 |

Table 52: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Residential

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

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|--------|---------|---------|---------|---------|---------|
| Light-duty vehicle capital costs - | | 51,477 | 133,974 | 213,805 | 325,180 | 352,492 | 336,852 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| 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 |
| Vehicle sales - Heavy-duty - diesel (%) | 97.2 | 92.1 | 67 | 23.3 | 4.22 | 0.628 | 0 |

Table 53: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Transportation (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|------|
| 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 |
| Vehicle sales - Light-duty - diesel (%) | 1.4 | 1.68 | 1.2 | 0.382 | 0.072 | 0.013 | 0 |
| 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 - 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 - diesel (%) | 64.7 | 59.7 | 42.3 | 14.4 | 2.59 | 0.384 | 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 - hydrogen | 0.196 | 1.27 | 6.33 | 15.2 | 19.1 | 19.9 | 20 |
| FC (%) | | | | | | | |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.255 | 0.205 | 0.083 | 0.019 | 0.004 | 0 |

Table 54: E+RE- scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---------|---------|---------|---------|---------|---------|---------|
| | | | | | | | |
| Capital invested - Biomass power plant | 0 | 0.001 | 0.245 | 0 | 0 | 0 | 0 |
| (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu allam | 0 | 0 | 0 | 0.523 | 0.171 | 0.171 | 0.881 |
| power plant (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu power | 0 | 0 | 66.3 | 5.89 | 5.65 | 48.6 | 73.9 |
| plant (billion \$2018) | | | | | | | |
| 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 |
| 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 - Coal (MW) | 215,985 | 44,884 | 62.3 | 136 | 148 | 147 | 33.9 |
| Installed - Ct (MW) | 143,739 | 129,695 | 94,911 | 100,127 | 170,549 | 157,934 | 130,899 |
| Installed - Geothermal (MW) | 2,397 | 2,403 | 24,727 | 24,718 | 24,710 | 24,702 | 24,666 |
| Installed - Grid battery storage (MW) | | 819 | 1,328 | 3,062 | 13,842 | 44,320 | 52,980 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Nuclear (MW) | 98,486 | 95,135 | 95,008 | 99,119 | 130,574 | 191,067 | 310,836 |
| Installed - Offshore wind (MW) | 29.3 | 5,029 | 10,029 | 15,029 | 20,029 | 25,000 | 30,000 |
| Installed - Onshore wind (MW) | 92,786 | 165,010 | 230,880 | 275,200 | 372,928 | 467,805 | 527,977 |
| Installed - Other (MW) | 68,074 | 57,101 | 54,650 | 53,942 | 52,322 | 51,237 | 44,539 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |
| 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 |

Table 55: E+RE- scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|-------|-------|--------|--------|--------|---------|---------|
| Biomass (TWh) | 18.2 | 19.6 | 43.4 | 25.4 | 19.4 | 14.6 | 0.174 |
| Biomass power plant (GWh) | 3,616 | 794 | 14,160 | 5,310 | 4,477 | 2,155 | 48 |
| Biomass w cc (TWh) | 0 | 0 | 74.4 | 81.5 | 87.9 | 143 | 226 |
| Biomass w/ccu allam power plant (GWh) | 0 | 0 | 0 | 484 | 576 | 725 | 1,609 |
| Biomass w/ccu power plant (GWh) | 0 | 0 | 74,392 | 80,983 | 87,310 | 141,852 | 224,713 |
| Coal (TWh) | 982 | 225 | 0.218 | 0.476 | 0.52 | 0.515 | 0.119 |
| 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 |
| Geothermal (TWh) | 14.6 | 14.6 | 151 | 151 | 151 | 151 | 150 |
| Hydro (TWh) | 300 | 312 | 295 | 296 | 304 | 294 | 296 |

Table 55: E+RE- scenario - PILLAR 2: Clean Electricity - Generation (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------|-------|------|------|-------|-------|-------|-------|
| Nuclear (TWh) | 802 | 775 | 775 | 812 | 1,075 | 1,580 | 2,578 |
| Offshore wind (TWh) | 0.092 | 20.3 | 42.4 | 76.3 | 90.7 | 109 | 133 |
| Onshore wind (TWh) | 390 | 686 | 974 | 1,157 | 1,585 | 1,984 | 2,223 |
| 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 |

Table 56: E+RE- scenario - PILLAR 2: Clean Electricity - Transmission

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Total HV transmission (for wind and solar) | 0 | 13.9 | 24.4 | 35.9 | 55.4 | 75.6 | 89.4 |
| - Base all (%) | | | | | | | |

Table 57: E+RE- scenario - PILLAR 3: Clean fuels - Bioenergy

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

Table 58: E+RE- scenario - PILLAR 4: CCUS - CO2 storage

| | | - | | | | | |
|-------------------|------|------|------|------|------|-------|-------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| CO2 storage (MMT) | 0 | 2.77 | 197 | 576 | 889 | 1,266 | 1,649 |

Table 59: E+RE- scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------------------------------|------|------|------|------|------|------|----------|
| Carbon sink potential - Aggressive | | | | | | | -23,286 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -203,503 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -7,391 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -234,180 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -23,286 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -106,430 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -3,696 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -133,412 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |

Table 59: E+RE- scenario - PILLAR 6: Land sinks - Agriculture (continued)

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

Table 60: E+RE- scenario - PILLAR 6: Land sinks - Forests

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

Table 60: E+RE- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - Low - Reforest | | | | | | | -121,000 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -20,000 |
| pasture (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Low - Restore | | | | | | | -60,000 |
| productivity (1000 tC02e/y) | | | | | | | 07.700 |
| Carbon sink potential - Mid - Accelerate | | | | | | | -36,700 |
| regeneration (1000 tCO2e/y) Carbon sink potential - Mid - All (not | | | | | | | |
| counting overlap) (1000 tC02e/y) | | | | | | | 1,020,200 |
| Carbon sink potential - Mid - Avoid | | | | | | | -49,000 |
| deforestation (1000 tC02e/y) | | | | | | | 47,000 |
| Carbon sink potential - Mid - Extend | | | | | | | -209,000 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Improve | | | | | | | -42,500 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | |
| retention of HWP (1000 tCO2e/y) | | | | | | | 200,000 |
| Carbon sink potential - Mid - Increase | | | | | | | -40,500 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -181,500 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -142,000 |
| pasture (1000 tC02e/y) | | | | | | | 110.000 |
| Carbon sink potential - Mid - Restore | | | | | | | -119,000 |
| productivity (1000 tCO2e/y) | | | | | | | 0.000 |
| Land impacted for carbon sink potential - High - Accelerate regeneration (1000 | | | | | | | 8,000 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | + | + | | | | | 11,373 |
| High - Avoid deforestation (over 30 years) | | | | | | | 11,010 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 154,000 |
| High - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 21,000 |
| High - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | (|
| High - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 5,700 |
| High - Increase trees outside forests (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 16,000 |
| High - Reforest cropland (1000 hectares) | | | | | | | 10,000 |
| Land impacted for carbon sink potential - | + | + | | | | | 7,500 |
| High - Reforest pasture (1000 hectares) | | | | | | | 1,500 |
| Land impacted for carbon sink potential - | | | | | | | 59,000 |
| High - Restore productivity (1000 | | | | | | | 07,000 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 282,573 |
| High - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 4,000 |
| Low - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 10,67 |
| Low - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |

Table 60: E+RE- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink potential - | | | | | | | 59,000 |
| Low - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 10,500 |
| Low - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| Low - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,000 |
| Low - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | 0.000 |
| Land impacted for carbon sink potential - | | | | | | | 8,000 |
| Low - Reforest cropland (1000 hectares) | | | | | | | 1.000 |
| Land impacted for carbon sink potential - | | | | | | | 1,300 |
| Low - Reforest pasture (1000 hectares) | | | | | | | 05.700 |
| Land impacted for carbon sink potential - | | | | | | | 35,700 |
| Low - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | 100 177 |
| Land impacted for carbon sink potential - | | | | | | | 132,177 |
| Low - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | (000 |
| Land impacted for carbon sink potential - | | | | | | | 6,000 |
| Mid - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | 11 005 |
| Land impacted for carbon sink potential - | | | | | | | 11,025 |
| Mid - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | 107 500 |
| Land impacted for carbon sink potential - | | | | | | | 106,500 |
| Mid - Extend rotation length (1000 | | | | | | | |
| hectares) Land impacted for carbon sink potential - | | | | | | | 15,800 |
| Mid - Improve plantations (1000 hectares) | | | | | | | 15,600 |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| · | | | | | | | U |
| Mid - Increase retention of HWP (1000 | | | | | | | |
| hectares) Land impacted for carbon sink potential - | | | | | | | 4,350 |
| Mid - Increase trees outside forests (1000 | | | | | | | 4,350 |
| - | | | | | | | |
| hectares) | | | | | | | 10.000 |
| Land impacted for carbon sink potential - Mid - Reforest cropland (1000 hectares) | | | | | | | 12,000 |
| | | | | | | | 9,400 |
| Land impacted for carbon sink potential - | | | | | | | 9,400 |
| Mid - Reforest pasture (1000 hectares) | | | | | | | 71,900 |
| Land impacted for carbon sink potential - | | | | | | | 71,900 |
| Mid - Restore productivity (1000 | | | | | | | |
| hectares) Land impacted for carbon sink potential - | | | | | | | 00/075 |
| | | | | | | | 236,975 |
| Mid - Total impacted (over 30 years) (1000 hectares) | | | | | | | |
| Hectaresj | | | | | | | |

Table 61: 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 62: E+RE- scenario - IMPACTS - Fossil fuel industries

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|---------|
| Natural gas consumption - Annual (tcf) | | 24,131 | 21,291 | 20,400 | 18,525 | 15,159 | 12,531 |
| Natural gas consumption - Cumulative (tcf) | | | | | | | 604,218 |

Table 62: E+RE- scenario - IMPACTS - Fossil fuel industries (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|-----------|
| 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 |
| Oil consumption - Annual (million bbls) | | 5,922 | 5,196 | 4,119 | 3,106 | 2,384 | 1,930 |
| Oil consumption - Cumulative (million | | | | | | | 128,050 |
| bbls) | | | | | | | |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 4,127 | 3,429 | 2,512 |
| Oil production - Cumulative (million bbls) | | | | | | | 137,850 |

Table 63: E+RE- scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|---------|--------|--------|--------|--------|-------|
| Monetary damages from air pollution - | | 22,661 | 29.5 | 28.3 | 24.2 | 16.6 | 1.24 |
| Coal (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 13,081 | 8,360 | 9,347 | 8,269 | 3,897 | 985 |
| Natural Gas (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 102,386 | 96,814 | 74,557 | 43,657 | 20,044 | 7,790 |
| Transportation (million 2019\$) | | | | | | | |
| Premature deaths from air pollution - | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Coal (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1,477 | 944 | 1,055 | 933 | 440 | 111 |
| Natural Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 11,515 | 10,889 | 8,385 | 4,910 | 2,254 | 876 |
| Transportation (deaths) | | | | | | | |

Table 64: 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) | | 564,240 | 617,991 | 685,586 | 719,730 | 743,266 | 850,372 |
| By economic sector - Manufacturing | | 588,096 | 542,489 | 535,843 | 511,626 | 442,548 | 427,854 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 462,328 | 364,057 | 291,916 | 202,222 | 144,611 | 95,196 |
| By economic sector - Other (jobs) | | 53,014 | 58,064 | 71,028 | 84,820 | 95,569 | 129,975 |
| By economic sector - Pipeline (jobs) | | 47,529 | 56,650 | 51,074 | 38,386 | 34,708 | 36,901 |
| By economic sector - Professional (jobs) | | 319,609 | 332,341 | 387,337 | 432,164 | 465,444 | 539,068 |
| By economic sector - Trade (jobs) | | 292,298 | 275,926 | 286,155 | 286,444 | 289,100 | 322,851 |
| By economic sector - Utilities (jobs) | | 476,510 | 542,229 | 654,430 | 753,103 | 848,724 | 1,023,980 |
| By education level - All sectors - | | 852,749 | 861,209 | 922,936 | 952,528 | 966,808 | 1,085,013 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - All sectors - | | 628,739 | 613,529 | 644,107 | 651,344 | 659,923 | 737,730 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - All sectors - Doctoral | | 20,890 | 20,613 | 22,291 | 23,272 | 24,429 | 28,105 |
| degree (jobs) | | | | | | | |
| By education level - All sectors - High | | 1,184,963 | 1,191,502 | 1,273,949 | 1,289,116 | 1,287,990 | 1,435,786 |
| school diploma or less (jobs) | | | | | | | |
| By education level - All sectors - Masters | | 148,595 | 146,148 | 155,786 | 160,040 | 164,889 | 186,829 |
| or professional degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 15,585 | 19,605 | 32,904 | 34,187 | 35,394 | 45,925 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Biomass sector - | | 14,089 | 17,574 | 30,605 | 33,633 | 36,161 | 46,832 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 682 | 913 | 1,736 | 2,038 | 2,297 | 2,992 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Biomass sector - High | | 47,821 | 60,096 | 85,822 | 79,460 | 73,172 | 91,357 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Biomass sector - | | 3,878 | 4,982 | 8,752 | 9,750 | 10,586 | 13,711 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - CO2 sector - | | 2,815 | 43,524 | 37,197 | 17,230 | 26,131 | 50,333 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - CO2 sector - | | 1,395 | 20,717 | 18,544 | 9,251 | 13,901 | 24,619 |
| Bachelors degree (jobs) | | | | | - | | |

Table 64: E+RE- scenario - IMPACTS - Jobs (continued)

| Separation Sep | Table 64: E+RE- scenario - IMPACTS - Jobs | | - | | | | | |
|--|---|------|----------|----------|-----------|-----------|-----------|----------|
| degree (jobs) Sy education level - CO2 sector - High school diploma or less (jobs) Sy education level - CO2 sector - Masters Si Sy education level - CO2 sector - Masters Si Sy education level - CO2 sector - Masters Si Sy education level - CO2 sector - Masters Si Sy education level - CO2 sector - Masters Si Sy education level - CO2 sector - Masters Si Sy education level - CO2 sector - Secondary Sy education level - CO2 sector - High sector - Secondary Sy education level - CO2 sector - High sector - Secondary Sy education level - CO2 sector - High sector - Secondary Sy education level - CO2 sector - Masters Si Si Si Si Si Si Si S | Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Pyeducation level - COZ sector - High school diploma or less (jobs) Sy education level - COZ sector - Masters or professional degree (jobs) Sy education level - COZ sector - Masters or professional degree (jobs) Sy education level - COZ sector - Masters or professional degree (jobs) Sy education level - CoZ sector - Masters or professional degree (jobs) Sy education level - CoZ sector - Masters or professional degree (jobs) Sy education level - CoZ sector - Masters or professional degree (jobs) Sy education level - CoZ sector - Baschelors degree (jobs) Sy education level - CoZ sector - Baschelors degree (jobs) Sy education level - CoZ sector - Baschelors degree (jobs) Sy education level - CoZ sector - High school diploma or less (jobs) Sy education level - CoZ sector - High school diploma or less (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Sachol diploma or less (jobs) Sy education level - Grid sector - Baschelors degree (jobs) Sy education level - Grid sector - Baschelors degree (jobs) Sy education level - Grid sector - Baschelors degree (jobs) Sy education level - Grid sector - Baschelors degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Grid sector - Masters or professional degree | | | 27.8 | 380 | 378 | 217 | 322 | 491 |
| School diploma or less (jobs) By education level - CO2 sector - Masters 20,558 5,466 2,968 2,579 2,324 1,926 2,926 2,529 2,324 1,926 2,926 2,926 2,529 2,324 1,926 2,926 | | | | | | | | |
| Syeducation level - CO2 sector - Masters or professional degree (pibs) | | | 3,476 | 53,796 | 46,155 | 21,475 | 32,628 | 62,868 |
| or professional degree (jobs) By education level - Coal sector - | | | | | | | | |
| Py education level - Coal sector - Associates degree or some college (jobs) Status Stat | | | 311 | 4,559 | 4,139 | 2,109 | 3,160 | 5,456 |
| Associates degree or some college (lobs) by education level - Coal sector - Doctoral degree (jobs) by education level - Coal sector - Doctoral degree (jobs) by education level - Coal sector - Doctoral degree (jobs) by education level - Coal sector - High school diploma or less (jobs) by education level - Coal sector - High school diploma or less (jobs) by education level - Coal sector - High school diploma or less (jobs) by education level - Coal sector - Masters or professional degree (jobs) by education level - Goal sector - Masters or professional degree (jobs) by education level - Goal sector - High school diploma or less (jobs) by education level - Goal sector - Basel - Ba | | | | | | | | |
| Syeducation level - Coal sector - Doctoral 13,402 3,303 1,688 1,517 1,413 1,203 1,203 1,688 1,517 1,413 1,203 1,203 1,688 1,517 1,413 1,203 1,203 1,688 1,517 1,413 1,203 1,203 1,688 1,517 1,413 1,203 1,688 1,517 1,413 1,203 1,203 1,688 1,517 1,413 1,203 1,203 1,688 1,517 1,413 1,203 1,203 1,688 1,517 1,413 1,203 1,203 1,688 1,517 1,413 1,203 1,688 1,517 1,413 1,203 1,203 1,203 1,688 1,517 1,413 1,203 1,203 1,203 1,203 1,203 1,203 1,203 1,688 1,517 1,413 1,203 1,203 1,203 1,203 1,203 1,688 1,517 1,413 1,203 | By education level - Coal sector - | | 20,558 | 5,466 | 2,968 | 2,579 | 2,324 | 1,926 |
| Bachelors degree (jobs) Py education level - Coal sector - Doctoral degree (jobs) Py education level - Coal sector - High Sty education level - Coal sector - Masters or professional degree (jobs) Py education level - Coal sector - Masters or professional degree (jobs) Py education level - Coal sector - Masters or professional degree (jobs) Py education level - Coal sector - Masters or professional degree (jobs) Py education level - Chrid sector - Sacration (John Style Styl | | | | | | | | |
| By education level - Coal sector - Doctoral degree (jobs) By education level - Coal sector - High school diploma or less (jobs) By education level - Coal sector - Masters 3,317 801 369 334 313 270 Sy education level - Coal sector - Masters 3,317 801 369 334 313 270 Sy education level - Coal sector - Masters 3,317 801 369 334 313 270 Sy education level - Coal sector - Masters 3,317 801 369 334 313 270 Sy education level - Coal sector - Masters 3,317 801 369 334 313 270 Sy education level - Grid sector - Masters 175,299 197,833 275,867 328,791 350,586 380,763 Associates degree or some college (jobs) By education level - Grid sector - Doctoral 2,896 3,193 4,349 5,043 5,275 5,598 degree (jobs) 589 education level - Grid sector - High 224,161 254,252 356,322 426,807 457,367 499,201 Sy education level - Grid sector - Masters 25,278 28,252 39,023 46,075 48,677 52,388 By education level - Grid sector - Masters 25,278 28,252 39,023 46,075 48,677 52,388 By education level - Natural gas sector - Masters 186,211 163,836 146,374 143,998 121,468 101,198 Associates degree or some college (jobs) 189,240 180 | By education level - Coal sector - | | 13,402 | 3,303 | 1,688 | 1,517 | 1,413 | 1,203 |
| degree (jobs) 28,741 8,731 5,749 4,896 4,322 3,507 school diploma or less (jobs) 3,317 801 369 334 313 270 3 | Bachelors degree (jobs) | | | | | | | |
| By education level - Coal sector - High school ediploma or less (jobs) By education level - Coal sector - Masters or professional degree (jobs) By education level - Coal sector - Masters or professional degree (jobs) By education level - Grain Sector - Section 175,299 197,833 275,867 328,791 350,586 380,763 380,7 | By education level - Coal sector - Doctoral | | 496 | 118 | 51.4 | 47.9 | 46.1 | 40.8 |
| School diploma or less (jobs) Per ducation level - Cali sector - Masters 175,299 197,833 275,867 328,791 350,586 380,763 | degree (jobs) | | | | | | | |
| By education level - Coal sector - Masters or professional degree (jobs) By education level - Grid sector - | By education level - Coal sector - High | | 28,741 | 8,731 | 5,749 | 4,896 | 4,322 | 3,507 |
| By education level - Coal sector - Masters or professional degree (jobs) By education level - Grid sector - | school diploma or less (jobs) | | | | | | | |
| or professional degree (jobs) By education level - Grid sector - Associates degree or some college (jobs) By education level - Grid sector - High Sy education level - Grid sector - Masters Or professional degree (jobs) By education level - Natural gas sector - By education level - Natural gas se | | | 3,317 | 801 | 369 | 334 | 313 | 270 |
| By education level - Grid sector - Associates degree or some college (jobs) Sy education level - Grid sector - Bachelors degree (jobs) Sy education level - Grid sector - Doctoral degree (jobs) Sy education level - Grid sector - Doctoral degree (jobs) Sy education level - Grid sector - Doctoral degree (jobs) Sy education level - Grid sector - High school diploma or less (jobs) Sy education level - Grid sector - High school diploma or less (jobs) Sy education level - Grid sector - High school diploma or less (jobs) Sy education level - Grid sector - High school diploma or less (jobs) Sy education level - Grid sector - High school diploma or less (jobs) Sy education level - Natural gas sector - Sy education level - Nuclear sector - Sy educ | | | -,- | | | | | |
| Associates degree or some college (jobs) | | | 175.299 | 197.833 | 275.867 | 328.791 | 350.586 | 380.763 |
| By education level - Grid sector - Bachelors degree (jobs) | | | , | , | , | 0=0, | | 555,155 |
| Bachelors degree (jobs) By education level - Grid sector - Doctoral degree (jobs) 2.896 3,193 4,349 5,063 5,275 5,598 | | | 100 456 | 112 629 | 156 046 | 184 807 | 195 830 | 211 382 |
| By education level - Grid sector - Doctoral degree (jobs) By education level - Grid sector - High school diploma or less (jobs) Sy education level - Grid sector - High school diploma or less (jobs) Sy education level - Grid sector - Masters Sy education level - Grid sector - Masters Sy education level - Natural gas sector - Sasciates degree (jobs) Sy education level - Natural gas sector - Sasciates degree or some college (jobs) Sy education level - Natural gas sector - Sasciates degree or some college (jobs) Sy education level - Natural gas sector - Sasciates degree (jobs) Sy education level - Natural gas sector - Sasciates degree (jobs) Sy education level - Natural gas sector - Sasciates degree (jobs) Sy education level - Natural gas sector - Sasciates degree (jobs) Sy education level - Natural gas sector - Sasciates degree (jobs) Sy education level - Natural gas sector - Sasciates degree (jobs) Sy education level - Natural gas sector - Sasciates degree (jobs) Sy education level - Natural gas sector - Sasciates degree or some college (jobs) Sy education level - Natural gas sector - Sasciates degree or some college (jobs) Sy education level - Natural gas sector - Sasciates degree or some college (jobs) Sy education level - Nuclear sector - Sasciates degree or some college (jobs) Sy education level - Nuclear sector - Sasciates degree or some college (jobs) Sy education level - Nuclear sector - Sasciates degree (jobs) Sy education level - Nuclear sector - Sasciates degree (jobs) Sy education level - Nuclear sector - Sasciates degree (jobs) Sy education level - Nuclear sector - Sasciates degree (jobs) Sy education level - Oil sector - Sasciates Sy | | | 100,400 | 112,027 | 100,040 | 10-1,001 | 170,000 | 211,002 |
| By education level - Grid sector - High 224,161 254,252 356,322 426,807 457,367 499,201 school diploma or less [jobs] Sy education level - Grid sector - Masters 25,278 28,252 39,023 46,075 48,677 52,388 or professional degree [jobs] Sy education level - Natural gas sector - 186,211 163,836 146,374 143,998 121,468 101,198 Associates degree or some college [jobs] Sy education level - Natural gas sector - 129,532 111,273 97,318 92,498 76,385 61,909 By education level - Natural gas sector - 129,532 111,273 97,318 92,498 76,385 61,909 By education level - Natural gas sector - 129,532 111,273 97,318 92,498 76,385 61,909 By education level - Natural gas sector - 122,7718 199,738 178,905 173,713 145,948 120,878 14gh school diploma or less [jobs] By education level - Natural gas sector - 13,716 16,539 25,707 38,158 63,147 103,282 Associates degree or some college [jobs] Sy education level - Nuclear sector - 13,716 16,539 25,707 38,158 63,147 103,282 Associates degree (jobs) Sy education level - Nuclear sector - 14,826 17,835 27,656 40,956 67,621 110,347 Aschelors degree [jobs] Sy education level - Nuclear sector - 14,826 17,835 27,656 40,956 67,621 110,347 48,930 47,400 79,201 129,855 36,001 diploma or less [jobs] Sy education level - Nuclear sector - 4,013 4,819 7,460 11,030 18,180 29,620 48,940 49, | | | 2 806 | 2 102 | /, 3/,0 | 5.063 | 5 275 | 5 500 |
| By education level - Grid sector - High school diploma or less (jobs) Sty education level - Grid sector - Masters or professional degree (jobs) Sty education level - Grid sector - Masters or professional degree (jobs) Sty education level - Natural gas sector - Associates degree or some college (jobs) Sty education level - Natural gas sector - Associates degree or some college (jobs) Sty education level - Natural gas sector - Sachelors degree (jobs) Sty education level - Natural gas sector - Sachelors degree (jobs) Sty education level - Natural gas sector - Sachelors degree (jobs) Sty education level - Natural gas sector - Sachelors degree (jobs) Sty education level - Natural gas sector - Sachelors degree (jobs) Sty education level - Natural gas sector - Sachelors degree (jobs) Sty education level - Natural gas sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Nuclear sector - Sachelors degree (jobs) Sty education level - Sachelors deg | | | 2,070 | 3,173 | 4,547 | 3,003 | 3,213 | 3,370 |
| School diploma or less (jobs) Sy education level - Grid sector - Masters or professional degree (jobs) Sy education level - Natural gas sector - Associates degree or some college (jobs) Sy education level - Natural gas sector - Associates degree (jobs) Sy education level - Natural gas sector - Bachelors degree (jobs) Sy education level - Natural gas sector - Bachelors degree (jobs) Sy education level - Natural gas sector - Bachelors degree (jobs) Sy education level - Natural gas sector - Coctoral degree (jobs) Sy education level - Natural gas sector - Coctoral degree (jobs) Sy education level - Natural gas sector - Coctoral degree (jobs) Sy education level - Natural gas sector - Coctoral degree (jobs) Sy education level - Natural gas sector - Coctoral degree (jobs) Sy education level - Natural gas sector - Coctoral degree (jobs) Sy education level - Natural gas sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Nuclear sector - Coctoral degree (jobs) Sy education level - Sy explain level - Sy explai | | | 007.171 | 057, 050 | 25/ 200 | /.0/ 0.07 | /E79/7 | /.00.001 |
| By education level - Grid sector - Masters or professional degree (jobs) | | | 224,161 | 254,252 | 336,322 | 426,807 | 451,361 | 499,201 |
| Or professional degree (jobs) Sy education level - Natural gas sector - Associates degree or some college (jobs) Sy education level - Natural gas sector - Bachelors degree (jobs) Sy education level - Natural gas sector - Sy education level - Nuclear sector - Sy education level - Sy education | | | 05.070 | 00.050 | 20.002 | // 075 | / 0 /77 | E0 000 |
| By education level - Natural gas sector | | | 25,278 | 28,252 | 39,023 | 46,075 | 48,677 | 52,388 |
| Associates degree or some college (jobs) By education level - Natural gas sector - 129,532 111,273 97,318 92,498 76,385 61,909 Bachelors degree (jobs) By education level - Natural gas sector - 4,301 3,664 3,163 2,968 2,424 1,927 Doctoral degree (jobs) By education level - Natural gas sector - 227,718 199,738 178,905 173,713 145,948 120,878 High school diploma or less (jobs) By education level - Natural gas sector - 31,729 27,137 23,572 22,376 18,417 14,876 Masters or professional degree (jobs) By education level - Nuclear sector - 13,716 16,539 25,707 38,158 63,147 103,282 Associates degree or some college (jobs) By education level - Nuclear sector - 14,826 17,835 27,656 40,956 67,621 110,347 Bachelors degree (jobs) By education level - Nuclear sector - 650 777 1,197 1,763 2,893 4,693 Doctoral degree (jobs) By education level - Nuclear sector - 650 777 1,197 1,763 2,893 4,693 By education level - Nuclear sector - 4,013 4,819 7,460 11,030 18,180 29,620 Masters or professional degree (jobs) By education level - Nuclear sector - 4,013 4,819 7,460 11,030 18,180 29,620 Masters or professional degree (jobs) By education level - Oil sector - Bachelors 211,973 183,998 156,433 111,469 83,191 57,319 degree (jobs) By education level - Oil sector - Bachelors 211,973 183,998 156,433 111,469 83,191 57,319 degree (jobs) By education level - Oil sector - High 317,630 281,307 243,628 178,020 136,250 96,881 school diploma or less (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - High 317,630 281,307 243,628 178,020 136,250 96,881 school diploma or less (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or profession | | | 40 (044 | 1(0.00) | 44 (074 | 1/0.000 | 101 / / 0 | 404400 |
| By education level - Natural gas sector - 129,532 111,273 97,318 92,498 76,385 61,909 Bachelors degree (jobs) By education level - Natural gas sector - 4,301 3,664 3,163 2,968 2,424 1,927 | | | 186,211 | 163,836 | 146,374 | 143,998 | 121,468 | 101,198 |
| Bachelors degree (jobs) By education level - Natural gas sector - Doctoral degree (jobs) By education level - Natural gas sector - Doctoral degree (jobs) By education level - Natural gas sector - High school diploma or less (jobs) By education level - Natural gas sector - High school diploma or less (jobs) By education level - Natural gas sector - Masters or professional degree (jobs) By education level - Nuclear sector - Masters or some college (jobs) By education level - Nuclear sector - Masters or professional degree (jobs) By education level - Nuclear sector - Masters or professional degree (jobs) By education level - Nuclear sector - Masters or professional degree (jobs) By education level - Nuclear sector - Masters or professional degree (jobs) By education level - Nuclear sector - Masters or professional degree (jobs) By education level - Nuclear sector - High school diploma or less (jobs) By education level - Nuclear sector - High school diploma or less (jobs) By education level - Oli sector - Associates degree or some college (jobs) By education level - Oli sector - Associates degree or some college (jobs) By education level - Oli sector - Bachelors 205,502 181,086 156,218 113,373 114,698 114,699 114 | | | | | | | | |
| By education level - Natural gas sector - 4,301 3,664 3,163 2,968 2,424 1,927 | | | 129,532 | 111,273 | 97,318 | 92,498 | 76,385 | 61,909 |
| Doctoral degree (jobs) By education level - Natural gas sector - 13,712 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 178,905 173,713 145,948 120,878 146,878 178,905 173,713 145,948 120,878 174,876 173,713 173,713 145,948 120,878 174,876 173,713 173,713 145,948 120,878 174,876 173,713 173,713 145,948 120,878 174,876 173,713 173,713 145,948 120,878 174,876 173,713 145,948 120,878 174,876 173,713 145,948 120,878 174,876 173,713 145,948 120,878 174,876 173,713 145,948 120,878 174,976 184,477 144,876 184,477 144,876 184,477 144,876 184,477 144,876 184,477 144,876 184,477 144,876 146,478 146,47 | | | | | | | | |
| By education level - Natural gas sector - High school diploma or less (jobs) By education level - Nuclear sector - Masters or professional degree (jobs) By education level - Nuclear sector - Masters or professional degree (jobs) By education level - Nuclear sector - 13,716 16,539 25,707 38,158 63,147 103,282 Associates degree or some college (jobs) By education level - Nuclear sector - 14,826 17,835 27,656 40,956 67,621 110,347 Bachelors degree (jobs) By education level - Nuclear sector - 650 777 1,197 1,763 2,893 4,693 Doctoral degree (jobs) By education level - Nuclear sector - 650 777 1,197 1,763 2,893 4,693 Doctoral degree (jobs) By education level - Nuclear sector - High school diploma or less (jobs) By education level - Nuclear sector - 4,013 4,819 7,460 11,030 18,180 29,620 Masters or professional degree (jobs) By education level - Oil sector - Associates degree or some college (jobs) By education level - Oil sector - Bachelors degree (jobs) By education level - Oil sector - Bachelors degree (jobs) By education level - Oil sector - Bachelors degree (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - Masters or 48,075 41,558 35,208 24,944 18,510 12,658 Py education level - Oil sector - Masters or 48,075 41,558 35,208 24,944 18,510 12,658 Py education level - Oil sector - Masters or 50,000 142,267 149,092 155,875 160,624 222,683 By education level - Oil sector - Masters or 50,000 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 18,924 18,924 18,924 | | | 4,301 | 3,664 | 3,163 | 2,968 | 2,424 | 1,927 |
| High school diploma or less (jobs) By education level - Natural gas sector - 31,729 27,137 23,572 22,376 18,417 14,876 Masters or professional degree (jobs) By education level - Nuclear sector - 13,716 16,539 25,707 38,158 63,147 103,282 Associates degree or some college (jobs) By education level - Nuclear sector - 14,826 17,835 27,656 40,956 67,621 110,347 Bachelors degree (jobs) By education level - Nuclear sector - 650 777 1,197 1,763 2,893 4,693 Doctoral degree (jobs) By education level - Nuclear sector - High school diploma or less (jobs) By education level - Nuclear sector - 4,013 4,819 7,460 11,030 18,180 29,620 Masters or professional degree (jobs) By education level - Oil sector - Associates degree or some college (jobs) By education level - Oil sector - Bachelors degree (jobs) By education level - Oil sector - Bachelors degree (jobs) By education level - Oil sector - Doctoral degree (jobs) By education level - Oil sector - Doctoral degree (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil secto | | | | | | | | |
| By education level - Natural gas sector - Masters or professional degree (jobs) By education level - Nuclear sector - 13,716 16,539 25,707 38,158 63,147 103,282 Associates degree or some college (jobs) By education level - Nuclear sector - 14,826 17,835 27,656 40,956 67,621 110,347 8achelors degree (jobs) By education level - Nuclear sector - 650 777 1,197 1,763 2,893 4,693 A,693 A | | | 227,718 | 199,738 | 178,905 | 173,713 | 145,948 | 120,878 |
| Masters or professional degree (jobs) By education level - Nuclear sector - Associates degree or some college (jobs) 13,716 16,539 25,707 38,158 63,147 103,282 Associates degree or some college (jobs) By education level - Nuclear sector - Bachelors degree (jobs) 14,826 17,835 27,656 40,956 67,621 110,347 By education level - Nuclear sector - By education level - Nuclear sector - High school diploma or less (jobs) 17,026 20,585 32,080 47,740 79,201 129,855 By education level - Nuclear sector - Masters or professional degree (jobs) 4,013 4,819 7,460 11,030 18,180 29,620 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 - Bachelors degree (jobs) 6,848 5,981 5,123 3,669 2,753 1,903 By education level - Oil sector - High school diploma or less (jobs) 317,630 281,307 | | | | | | | | |
| By education level - Nuclear sector - Associates degree or some college (jobs) 14,826 17,835 25,707 38,158 63,147 103,282 | By education level - Natural gas sector - | | 31,729 | 27,137 | 23,572 | 22,376 | 18,417 | 14,876 |
| Associates degree or some college (jobs) By education level - Nuclear sector - Bachelors degree (jobs) By education level - Nuclear sector - Doctoral degree (jobs) By education level - Nuclear sector - Doctoral degree (jobs) By education level - Nuclear sector - By education level - Oil sector - Associates By education level - Oil sector - Associates By education level - Oil sector - Bachelors By education level - Oil sector - Bachelors By education level - Oil sector - Doctoral By education level - Oil sector - High School diploma or less (jobs) By education level - Oil sector - High School diploma or less (jobs) By education level - Oil sector - Masters or By education level - Oil sector - Masters or By education level - Oil sector - Masters or By education level - Oil sector - Masters or By education level - Oil sector - Masters or By education level - Oil sector - Masters or By education level - Solar PV sector - By education level - Solar | Masters or professional degree (jobs) | | | | | | | |
| By education level - Nuclear sector - Bachelors degree (jobs) By education level - Nuclear sector - G50 777 1,197 1,763 2,893 4,693 4,693 2,894 4,693 2,895 4,693 2,895 32,080 47,740 79,201 129,855 41,580 | By education level - Nuclear sector - | | 13,716 | 16,539 | 25,707 | 38,158 | 63,147 | 103,282 |
| Bachelors degree (jobs) By education level - Nuclear sector - 650 777 1,197 1,763 2,893 4,693 | Associates degree or some college (jobs) | | | | | | | |
| Bachelors degree (jobs) By education level - Nuclear sector - 650 777 1,197 1,763 2,893 4,693 | By education level - Nuclear sector - | | 14,826 | 17,835 | 27,656 | 40,956 | 67,621 | 110,347 |
| Doctoral degree (jobs) By education level - Nuclear sector - High school diploma or less (jobs) By education level - Nuclear sector - High school diploma or less (jobs) By education level - Nuclear sector - High sector - A,013 | Bachelors degree (jobs) | | | | | | | |
| By education level - Nuclear sector - High school diploma or less (jobs) 17,026 20,585 32,080 47,740 79,201 129,855 129,855 10,000 11,000 18,180 29,620 11,000 11,000 18,180 29,620 11,000 11,000 18,180 29,620 11,000 11,000 18,180 29,620 18,1000 19,600 11,000 18,180 29,620 18,1000 19,600 11,000 18,180 29,620 18,000 156,218 113,373 | By education level - Nuclear sector - | | 650 | 777 | 1,197 | 1,763 | 2,893 | 4,693 |
| School diploma or less (jobs) By education level - Nuclear sector - 4,013 4,819 7,460 11,030 18,180 29,620 | Doctoral degree (jobs) | | | | | | | |
| School diploma or less (jobs) By education level - Nuclear sector - 4,013 4,819 7,460 11,030 18,180 29,620 | By education level - Nuclear sector - High | | 17,026 | 20,585 | 32,080 | 47,740 | 79,201 | 129,855 |
| By education level - Nuclear sector - Masters or professional degree (jobs) By education level - Oil sector - Associates degree or some college (jobs) By education level - Oil sector - Bachelors degree (jobs) By education level - Oil sector - Bachelors degree (jobs) By education level - Oil sector - Doctoral degree (jobs) By education level - Oil sector - High school diploma or less (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Oil sector - Masters or professional degree (jobs) By education level - Solar PV sector - Associates degree or some college (jobs) By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | , | -, | , | , | , - | , |
| Masters or professional degree (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 - Bachelors degree (jobs) 6,848 5,981 5,123 3,669 2,753 1,903 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 - Masters or professional degree (jobs) 48,075 41,558 35,208 24,944 18,510 12,658 By education level - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | 4.013 | 4.819 | 7.460 | 11.030 | 18.180 | 29.620 |
| By education level - Oil sector - Associates degree or some college (jobs) 205,502 181,086 156,218 113,373 86,209 60,753 | | | ., 6 . 6 | .,6.7 | ., | ,000 | .57.55 | 27,020 |
| degree or some college (jobs) 211,973 183,998 156,433 111,469 83,191 57,319 degree (jobs) By education level - Oil sector - Doctoral degree (jobs) 6,848 5,981 5,123 3,669 2,753 1,903 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 - Masters or professional degree (jobs) 48,075 41,558 35,208 24,944 18,510 12,658 By education level - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | 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 - Doctoral degree (jobs) 6,848 5,981 5,123 3,669 2,753 1,903 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 - Masters or professional degree (jobs) 48,075 41,558 35,208 24,944 18,510 12,658 By education level - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | , | | 200,002 | 101,000 | 100,210 | 110,010 | 00,207 | 00,100 |
| degree (jobs) 6,848 5,981 5,123 3,669 2,753 1,903 degree (jobs) 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 - Masters or professional degree (jobs) 48,075 41,558 35,208 24,944 18,510 12,658 By education level - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - Associates degree or some college (jobs) 88,302 83,195 87,771 92,558 96,333 134,924 | | | 211 973 | 183 998 | 156 / 33 | 111 / 60 | 83 101 | 57 310 |
| By education level - Oil sector - Doctoral degree (jobs) 6,848 5,981 5,123 3,669 2,753 1,903 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 - Masters or professional degree (jobs) 48,075 41,558 35,208 24,944 18,510 12,658 By education level - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | 211,710 | 103,770 | 130,433 | 111,407 | 03,171 | 31,317 |
| degree (jobs) 317,630 281,307 243,628 178,020 136,250 96,881 school diploma or less (jobs) 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 - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | 4 0 /. 0 | 5 001 | E 102 | 2 440 | 2.752 | 1002 |
| 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 - Masters or professional degree (jobs) 48,075 41,558 35,208 24,944 18,510 12,658 By education level - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | 0,040 | 5,961 | 5,125 | 3,009 | 2,155 | 1,903 |
| school diploma or less (jobs) 48,075 41,558 35,208 24,944 18,510 12,658 professional degree (jobs) By education level - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | 017 / 00 | 001 007 | 0/.0 /00 | 170 000 | 107.050 | 0/ 001 |
| 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 - Solar PV sector - Associates degree or some college (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | = - | | 317,630 | 281,307 | 243,628 | 178,020 | 136,250 | ५७,४४। |
| professional degree (jobs) 152,002 142,267 149,092 155,875 160,624 222,683 Associates degree or some college (jobs) By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | | | 27.222 | | 10.710 | |
| By education level - Solar PV sector - 152,002 142,267 149,092 155,875 160,624 222,683 Associates degree or some college (jobs) By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | 48,075 | 41,558 | 35,208 | 24,944 | 18,510 | 12,658 |
| Associates degree or some college (jobs) 88,302 83,195 87,771 92,558 96,333 134,924 | | | 450.000 | 4/05:= | 4/2 2 = = | 45555 | 4(5 : 5 : | |
| By education level - Solar PV sector - 88,302 83,195 87,771 92,558 96,333 134,924 | | | 152,002 | 142,267 | 149,092 | 155,875 | 160,624 | 222,683 |
| | | | | | | | | |
| Bachelors degree (jobs) | | | 88,302 | 83,195 | 87,771 | 92,558 | 96,333 | 134,924 |
| | Bachelors degree (jobs) | | | | | | | |

Table 64: E+RE- scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|----------|---------|----------|---------|-----------|-----------|
| By education level - Solar PV sector - | | 2,857 | 2,848 | 3,206 | 3,564 | 3,865 | 5,638 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Solar PV sector - High | | 213,421 | 197,918 | 205,192 | 212,005 | 215,748 | 295,066 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Solar PV sector - | | 19,142 | 18,505 | 20,120 | 21,787 | 23,194 | 33,243 |
| Masters or professional degree (jobs) | | | 21.272 | 24.422 | 112.22 | 100.00= | |
| By education level - Wind sector - | | 81,062 | 91,053 | 96,609 | 118,336 | 120,925 | 118,151 |
| Associates degree or some college (jobs) | | F / 7/ / | (0.00/ | (0.0// | 0/ /57 | 00.000 | 00107 |
| By education level - Wind sector - | | 54,764 | 63,004 | 68,046 | 84,657 | 89,089 | 89,196 |
| Bachelors degree (jobs) By education level - Wind sector - | | 0 101 | 2,738 | 3,088 | 3,943 | 4,554 | 4,821 |
| Doctoral degree (jobs) | | 2,131 | 2,136 | 3,088 | 3,943 | 4,554 | 4,021 |
| By education level - Wind sector - High | | 104,968 | 115,077 | 120,097 | 145,001 | 143,354 | 136,172 |
| school diploma or less (jobs) | | 104,700 | 113,011 | 120,071 | 143,001 | 143,334 | 100,112 |
| By education level - Wind sector - Masters | | 12,853 | 15,534 | 17,144 | 21,636 | 23,851 | 24,608 |
| or professional degree (jobs) | | 12,000 | 10,004 | 11,144 | 21,000 | 20,001 | 24,000 |
| 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) | | 528,090 | 596,159 | 831,606 | 991,543 | 1,057,735 | 1,149,332 |
| By resource sector - Natural Gas (jobs) | | 579,492 | 505,649 | 449,332 | 435,553 | 364,642 | 300,788 |
| By resource sector - Nuclear (jobs) | | 50,231 | 60,555 | 94,101 | 139,647 | 231,042 | 377,797 |
| By resource sector - Oil (jobs) | | 790,028 | 693,931 | 596,610 | 431,475 | 326,913 | 229,514 |
| By resource sector - Solar (jobs) | | 475,723 | 444,734 | 465,380 | 485,789 | 499,764 | 691,554 |
| By resource sector - Wind (jobs) | | 255,779 | 287,406 | 304,985 | 373,573 | 381,772 | 372,947 |
| Median wages - Annual - Biomass (\$2019 | | 51,666 | 53,532 | 56,879 | 59,868 | 62,772 | 64,193 |
| per job) | | 01,000 | 00,002 | 00,017 | 07,000 | 02,112 | 04,170 |
| Median wages - Annual - CO2 (\$2019 per | | 62,403 | 62,811 | 64,256 | 66,235 | 67,173 | 66,956 |
| job) | | 02, 100 | 02,011 | 0 .,200 | 00,200 | 3.,3 | 00,700 |
| Median wages - Annual - Coal (\$2019 per | | 60,717 | 58,966 | 55,632 | 56,538 | 57,489 | 58,483 |
| job) | | , | | , | , | , . | , |
| Median wages - Annual - Grid (\$2019 per | | 62,539 | 63,375 | 64,248 | 65,159 | 66,110 | 67,102 |
| job) | | , | | • | • | , | • |
| Median wages - Annual - Natural Gas | | 66,236 | 67,055 | 67,908 | 68,519 | 69,331 | 70,036 |
| (\$2019 per job) | | | | | | | |
| Median wages - Annual - Nuclear (\$2019 | | 71,486 | 73,188 | 74,974 | 76,846 | 78,808 | 80,864 |
| per job) | | | | | | | |
| Median wages - Annual - Oil (\$2019 per | | 65,834 | 66,720 | 67,650 | 68,456 | 69,271 | 69,967 |
| job) | | | | | | | |
| Median wages - Annual - Solar (\$2019 per | | 55,458 | 56,359 | 57,373 | 58,436 | 59,544 | 60,749 |
| job) | | | | | | | |
| Median wages - Annual - Wind (\$2019 per | | 58,266 | 59,962 | 61,252 | 62,475 | 64,619 | 66,554 |
| job) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 8,269 | 10,558 | 17,339 | 17,726 | 18,126 | 23,389 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 2,558 | 3,232 | 5,758 | 6,103 | 6,468 | 8,510 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 13,221 | 17,052 | 27,270 | 27,875 | 28,306 | 36,043 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Biomass | | 572 | 670 | 1,022 | 990 | 957 | 1,250 |
| sector - Over 10 years (jobs) | | | | 122 / 22 | | 100 ==0 | 101 10= |
| On-Site or In-Plant Training - Biomass | | 57,434 | 71,657 | 108,430 | 106,373 | 103,753 | 131,625 |
| sector - Up to 1 year (jobs) | | 1 / 00 | 00.000 | 10 / 01 | 0407 | 10.010 | 07.700 |
| On-Site or In-Plant Training - CO2 sector - | | 1,483 | 22,923 | 19,621 | 9,107 | 13,819 | 26,600 |
| 1 to 4 years (jobs) | | 704 | 44 / 40 | 0.777 | / 000 | / /04 | 40.471 |
| On-Site or In-Plant Training - CO2 sector - | | 731 | 11,419 | 9,664 | 4,399 | 6,691 | 13,161 |
| 4 to 10 years (jobs) | | 1.000 | 10.7/.0 | 1/ 00/ | 7771 | 11 7/0 | 00.000 |
| On-Site or In-Plant Training - CO2 sector - | | 1,228 | 18,743 | 16,306 | 7,771 | 11,762 | 22,020 |
| None (jobs) | | 0/0 | 1050 | 11/5 | F10 | 700 | 1 |
| On-Site or In-Plant Training - CO2 sector - | | 86.9 | 1,358 | 1,145 | 518 | 788 | 1,555 |
| Over 10 years (jobs) | | | | 1 | | | |

Table 64: E+RE- scenario - IMPACTS - Jobs (continued)

| Table 64: E+RE- scenario - IMPACTS - Jobs | • | - | | | | | |
|---|------|---------|----------|---------|---------|---------|----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - CO2 sector - | | 4,497 | 68,533 | 59,677 | 28,487 | 43,083 | 80,432 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 10,419 | 2,840 | 1,585 | 1,367 | 1,223 | 1,007 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 4,032 | 975 | 427 | 368 | 328 | 269 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 9,841 | 2,576 | 1,407 | 1,243 | 1,140 | 959 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 487 | 114 | 47 | 41.6 | 38.2 | 32.3 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 41,734 | 11,915 | 7,358 | 6,353 | 5,689 | 4,680 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 91,211 | 103,099 | 143,993 | 171,889 | 183,573 | 199,689 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 40,059 | 45,270 | 63,211 | 75,438 | 80,546 | 87,593 |
| 4 to 10 years (jobs) | | -, | -, - | , | -, | | - , |
| On-Site or In-Plant Training - Grid sector - | | 80,419 | 90,582 | 126,078 | 150,001 | 159,675 | 173,139 |
| None (jobs) | | 33, | 70,002 | .20,0.0 | .00,00. | 10770.0 | ,, |
| On-Site or In-Plant Training - Grid sector - | | 5,193 | 5,865 | 8,184 | 9,761 | 10,416 | 11,320 |
| Over 10 years (jobs) | | 3,173 | 3,003 | 0,104 | 2,101 | 10,410 | 11,320 |
| On-Site or In-Plant Training - Grid sector - | | 311,208 | 351,344 | 490,140 | 584,453 | 623,527 | 677,591 |
| Up to 1 year (jobs) | | 311,200 | 331,344 | 470,140 | 364,433 | 023,321 | 011,371 |
| | | 07/0/ | 85,725 | 7/ 5/0 | 7/ 051 | (0.000 | F0 017 |
| On-Site or In-Plant Training - Natural gas | | 97,694 | 85,725 | 76,562 | 74,851 | 62,980 | 52,317 |
| sector - 1 to 4 years (jobs) | | 10.100 | 00.400 | 07.575 | 07.000 | 00.007 | 0/ 010 |
| On-Site or In-Plant Training - Natural gas | | 43,400 | 38,428 | 34,575 | 34,233 | 29,007 | 24,312 |
| sector - 4 to 10 years (jobs) | | | | | 10.1.10 | | |
| On-Site or In-Plant Training - Natural gas | | 92,260 | 80,124 | 70,811 | 68,462 | 57,144 | 47,024 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 5,150 | 4,603 | 4,165 | 4,173 | 3,558 | 2,999 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 340,988 | 296,769 | 263,218 | 253,834 | 211,953 | 174,136 |
| sector - Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 7,412 | 8,946 | 13,919 | 20,679 | 34,252 | 56,071 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 2,683 | 3,237 | 5,035 | 7,479 | 12,385 | 20,271 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 8,991 | 10,828 | 16,811 | 24,924 | 41,197 | 67,304 |
| sector - None (jobs) | | | . | | | , | , |
| On-Site or In-Plant Training - Nuclear | | 252 | 303 | 471 | 699 | 1,156 | 1,890 |
| sector - Over 10 years (jobs) | | | | | | 1,100 | ., |
| On-Site or In-Plant Training - Nuclear | | 30,893 | 37,240 | 57,866 | 85,866 | 142,052 | 232,261 |
| sector - Up to 1 year (jobs) | | 00,070 | 0.,2.0 | 0.,000 | 33,333 | ,00_ | |
| On-Site or In-Plant Training - Oil sector - 1 | | 116,417 | 102,660 | 88,636 | 64,334 | 48,922 | 34,459 |
| to 4 years (jobs) | | 110,411 | 102,000 | 00,000 | 04,004 | 40,722 | 04,407 |
| On-Site or In-Plant Training - Oil sector - | | 41,049 | 36,459 | 31,686 | 23,186 | 17,772 | 12,638 |
| 4 to 10 years (jobs) | | 41,049 | 30,437 | 31,000 | 23,100 | 11,112 | 12,030 |
| On-Site or In-Plant Training - Oil sector - | | 127,208 | 110,889 | 94,599 | 67,871 | 51,013 | 35,531 |
| None (jobs) | | 121,200 | 110,009 | 94,399 | 01,011 | 51,015 | 30,031 |
| On-Site or In-Plant Training - Oil sector - | | 4,546 | 4,112 | 3,638 | 2,706 | 2,107 | 1,519 |
| 9 | | 4,546 | 4,112 | 3,036 | 2,706 | 2,107 | 1,519 |
| Over 10 years (jobs) | | 500,000 | / 00 010 | 070.051 | 070 070 | 007.000 | 1/ 5 0/7 |
| On-Site or In-Plant Training - Oil sector - | | 500,808 | 439,812 | 378,051 | 273,378 | 207,099 | 145,367 |
| Up to 1 year (jobs) | | | | | | 22.11= | |
| On-Site or In-Plant Training - Solar PV | | 76,624 | 71,589 | 74,897 | 78,070 | 80,117 | 110,572 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 27,856 | 26,568 | 28,545 | 30,343 | 31,547 | 44,146 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 81,278 | 76,117 | 79,805 | 83,485 | 86,082 | 119,399 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 3,831 | 3,594 | 3,780 | 3,957 | 4,075 | 5,646 |
| sector - Over 10 years (jobs) | | | | | | | |
| , | | | | | | | |

Table 64: E+RE- scenario - IMPACTS - Jobs (continued)

| to 4 years (jobs) On-Site or In-Plant Training - Total jobs - 4 to 10 years (jobs) On-Site or In-Plant Training - Total jobs - 4 None (jobs) On-Site or In-Plant Training - Total jobs - 4 Very 10 years (jobs) On-Site or In-Plant Training - Total jobs - 22,179 Over 10 years (jobs) On-Site or In-Plant Training - Total jobs - 22,179 One-Site or In-Plant Training - Total jobs - 1,728,364 One-Site or In-Plant Training - Total jobs - 1,728,364 One-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) One-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | 2050 411,791 562,542 236,051 567,435 29,367 |
|--|--|
| sector - Up to 1 year (jobs) 449,799 453,679 484,557 496,638 502,936 | 562,542 236,051 567,435 |
| On-Site or In-Plant Training - Total jobs - 1 to 4 years (jobs) 449,799 453,679 484,557 496,638 502,936 502,937 502,937 502,937 502,937 502,937 502,937 502,937 502,937 502,937 502,937 502,937 502, | 236,051 |
| to 4 years (jobs) On-Site or In-Plant Training - Total jobs - 4 to 10 years (jobs) On-Site or In-Plant Training - Total jobs - 4 None (jobs) On-Site or In-Plant Training - Total jobs - 4 Very 10 years (jobs) On-Site or In-Plant Training - Total jobs - 22,179 Over 10 years (jobs) On-Site or In-Plant Training - Total jobs - 22,179 One-Site or In-Plant Training - Total jobs - 1,728,364 One-Site or In-Plant Training - Total jobs - 1,728,364 One-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) One-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | 236,051 |
| On-Site or In-Plant Training - Total jobs - 4 to 10 years (jobs) 176,731 182,836 197,509 204,440 209,626 On-Site or In-Plant Training - Total jobs - None (jobs) 458,863 457,024 486,427 497,141 503,608 On-Site or In-Plant Training - Total jobs - Over 10 years (jobs) 22,179 22,977 24,963 25,925 26,295 On-Site or In-Plant Training - Total jobs - Up to 1 year (jobs) 1,728,364 1,716,485 1,825,613 1,852,158 1,861,573 2,40,269 On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) 40,269 45,338 48,004 58,613 59,924 | 567,435 |
| to 10 years (jobs) On-Site or In-Plant Training - Total jobs - None (jobs) On-Site or In-Plant Training - Total jobs - 22,179 22,977 24,963 25,925 26,295 Over 10 years (jobs) On-Site or In-Plant Training - Total jobs - 1,728,364 1,716,485 1,825,613 1,852,158 1,861,573 2, Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) | 567,435 |
| On-Site or In-Plant Training - Total jobs - None (jobs) 458,863 457,024 486,427 497,141 503,608 On-Site or In-Plant Training - Total jobs - Over 10 years (jobs) 22,179 22,977 24,963 25,925 26,295 On-Site or In-Plant Training - Total jobs - Up to 1 year (jobs) 1,728,364 1,716,485 1,825,613 1,852,158 1,861,573 2,000 On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) 40,269 45,338 48,004 58,613 59,924 | |
| None (jobs) 22,179 22,977 24,963 25,925 26,295 Over 10 years (jobs) 1,728,364 1,716,485 1,825,613 1,852,158 1,861,573 2, Up to 1 year (jobs) 0n-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) 40,269 45,338 48,004 58,613 59,924 | |
| On-Site or In-Plant Training - Total jobs - Over 10 years (jobs) 22,179 22,977 24,963 25,925 26,295 On-Site or In-Plant Training - Total jobs - Up to 1 year (jobs) 1,728,364 1,716,485 1,825,613 1,852,158 1,861,573 2,000 On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) 40,269 45,338 48,004 58,613 59,924 | 29,367 |
| Over 10 years (jobs) 1,728,364 1,716,485 1,825,613 1,852,158 1,861,573 2, Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) 40,269 45,338 48,004 58,613 59,924 | 29,367 |
| Over 10 years (jobs) 1,728,364 1,716,485 1,825,613 1,852,158 1,861,573 2, Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) 40,269 45,338 48,004 58,613 59,924 | • |
| On-Site or In-Plant Training - Total jobs - Up to 1 year (jobs) 1,728,364 1,716,485 1,825,613 1,852,158 1,861,573 2, On-Site or In-Plant Training - Wind sector - 1 to 4 years (jobs) 40,269 45,338 48,004 58,613 59,924 | |
| Up to 1 year (jobs) 40,269 45,338 48,004 58,613 59,924 - 1 to 4 years (jobs) - | ,078,069 |
| On-Site or In-Plant Training - Wind sector 40,269 45,338 48,004 58,613 59,924 - 1 to 4 years (jobs) | |
| - 1 to 4 years (jobs) | 58,439 |
| | 00, 107 |
| On-Site or In-Plant Training - Wind sector 14,363 17,249 18,609 22,892 24,883 | 25,149 |
| - 4 to 10 years (jobs) | 23,147 |
| On-Site or In-Plant Training - Wind sector 44,417 50,112 53,339 65,509 67,290 | 66,017 |
| | 00,017 |
| - None (jobs) | 0.157 |
| On-Site or In-Plant Training - Wind sector 2,062 2,357 2,511 3,078 3,200 | 3,156 |
| - Over 10 years (jobs) | |
| - | 220,186 |
| - Up to 1 year (jobs) | |
| | 726,654 |
| years (jobs) | |
| On-the-Job Training - All sectors - 4 to 10 166,229 173,803 189,273 197,680 203,748 2 | 230,602 |
| years (jobs) | |
| On-the-Job Training - All sectors - None 157,241 154,903 164,033 166,565 168,895 | 191,403 |
| (jobs) | |
| On-the-Job Training - All sectors - Over 10 28,219 27,919 29,123 29,330 29,281 | 32,777 |
| years (jobs) | • |
| | ,292,028 |
| year (jobs) | 2,2,020 |
| On-the-Job Training - Biomass sector - 1 9,019 11,632 19,857 20,755 21,679 | 28,149 |
| to 4 years (jobs) | 20,147 |
| On-the-Job Training - Biomass sector - 4 2,062 2,704 4,989 5,335 5,720 | 7,539 |
| to 10 years (jobs) | 1,007 |
| On-the-Job Training - Biomass sector - 5,063 6,073 9,513 9,580 9,548 | 12,238 |
| | 12,230 |
| None (jobs) | 1.00/ |
| On-the-Job Training - Biomass sector - 586 690 1,086 1,071 1,057 | 1,386 |
| Over 10 years (jobs) | |
| | 151,505 |
| to 1 year (jobs) | |
| On-the-Job Training - CO2 sector - 1 to 4 1,973 30,531 26,093 12,082 18,335 | 35,372 |
| years (jobs) | |
| On-the-Job Training - CO2 sector - 4 to 10 736 11,550 9,721 4,383 6,676 | 13,273 |
| years (jobs) | |
| On-the-Job Training - CO2 sector - None 376 5,694 5,014 2,434 3,680 | 6,766 |
| (jobs) | |
| On-the-Job Training - CO2 sector - Over 80.3 1,238 1,072 505 768 | 1,466 |
| 10 years (jobs) | , |
| On-the-Job Training - CO2 sector - Up to 1 4,860 73,964 64,514 30,878 46,684 | 86,891 |
| year (jobs) | 00,071 |
| On-the-Job Training - Coal sector - 1 to 4 13,265 3,547 1,899 1,641 1,470 | 1,214 |
| | 1,214 |
| years (jobs) | |
| On the Joh Training Cool coston / to 10 | 259 |
| On-the-Job Training - Coal sector - 4 to 10 3,950 962 419 359 318 | |
| years (jobs) | |
| years (jobs) On-the-Job Training - Coal sector - None 3,285 870 503 442 403 | 337 |
| years (jobs) On-the-Job Training - Coal sector - None (jobs) 870 503 442 403 (jobs) | |
| years (jobs) On-the-Job Training - Coal sector - None 3,285 870 503 442 403 | 337 49.7 |

Table 64: E+RE- scenario - IMPACTS - Jobs (continued)

| Table 64: E+RE- scenario - IMPACTS - Jobs | • | - | | | | | |
|---|------|---------|---------|---------|---------|---------------------------------------|----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| 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 - Grid sector - 1 to 4 | | 118,627 | 134,022 | 187,088 | 223,222 | 238,275 | 259,062 |
| years (jobs) | | 110,021 | 134,022 | 107,000 | 223,222 | 236,215 | 259,062 |
| On-the-Job Training - Grid sector - 4 to 10 | | 40,317 | 45,590 | 63,698 | 76,067 | 81,267 | 88,432 |
| years (jobs) | | 40,311 | 45,570 | 03,076 | 10,001 | 61,201 | 00,432 |
| On-the-Job Training - Grid sector - None | | 25,845 | 29,136 | 40,589 | 48,334 | 51,500 | 55,896 |
| (jobs) | | 23,043 | 29,130 | 40,367 | 40,334 | 31,300 | 33,670 |
| On-the-Job Training - Grid sector - Over | | 4,232 | 4,787 | 6,689 | 7,991 | 8,540 | 9,296 |
| 10 years (jobs) | | 4,232 | 4,101 | 0,007 | 1,221 | 0,540 | 7,270 |
| On-the-Job Training - Grid sector - Up to 1 | | 339,069 | 382,625 | 533,541 | 635,929 | 678,155 | 736,646 |
| year (jobs) | | 007,007 | 002,020 | 000,041 | 000,727 | 010,100 | 100,040 |
| On-the-Job Training - Natural gas sector - | | 128,500 | 112,783 | 100,700 | 98,631 | 83,035 | 69,060 |
| 1 to 4 years (jobs) | | 120,000 | 112,100 | 100,100 | 70,001 | 33,000 | 07,000 |
| On-the-Job Training - Natural gas sector - | | 41,324 | 36,725 | 33,119 | 33,043 | 28,098 | 23,679 |
| 4 to 10 years (jobs) | | 11,02 | 00,120 | 00,117 | 00,010 | 20,070 | 20,017 |
| On-the-Job Training - Natural gas sector - | | 30,220 | 25,985 | 22,796 | 21,727 | 17,984 | 14,663 |
| None (jobs) | | 00,220 | 20,700 | , | , | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | ,000 |
| On-the-Job Training - Natural gas sector - | | 5,503 | 4,776 | 4,243 | 4,069 | 3,392 | 2,789 |
| Over 10 years (jobs) | | 0,000 | ., | 1,2 10 | 1,007 | 0,072 | 2,.07 |
| On-the-Job Training - Natural gas sector - | | 373,945 | 325,379 | 288,474 | 278,083 | 232,133 | 190,597 |
| Up to 1 year (jobs) | | 0.072.0 | 020,0.7 | 200, | , | 202,.00 | ., 0,0,. |
| On-the-Job Training - Nuclear sector - 1 to | | 9,725 | 11,736 | 18,257 | 27,122 | 44,918 | 73,522 |
| 4 years (jobs) | | 7,. 20 | ,. 00 | .0,20. | , | ,, | . 5,522 |
| On-the-Job Training - Nuclear sector - 4 | | 2,345 | 2,831 | 4,404 | 6,544 | 10,839 | 17,746 |
| to 10 years (jobs) | | _,-,- | _, | ., | 5,5 | , | , |
| On-the-Job Training - Nuclear sector - | | 3,374 | 4,065 | 6,315 | 9,367 | 15,492 | 25,322 |
| None (jobs) | | 0,0 | .,000 | 0,0.0 | 7,00. | .5, .72 | _0,0 |
| On-the-Job Training - Nuclear sector - | | 523 | 631 | 983 | 1,461 | 2,422 | 3,967 |
| Over 10 years (jobs) | | | | | , - | , | -, - |
| On-the-Job Training - Nuclear sector - Up | | 34,264 | 41,292 | 64,142 | 95,153 | 157,371 | 257,240 |
| to 1 year (jobs) | | , , | • | , | ., | ,- | |
| On-the-Job Training - Oil sector - 1 to 4 | | 143,995 | 126,810 | 109,358 | 79,262 | 60,197 | 42,346 |
| years (jobs) | | · | | | | | • |
| On-the-Job Training - Oil sector - 4 to 10 | | 34,009 | 30,239 | 26,292 | 19,275 | 14,800 | 10,561 |
| years (jobs) | | | | | • | | , |
| On-the-Job Training - Oil sector - None | | 48,067 | 41,572 | 35,155 | 25,043 | 18,687 | 12,944 |
| (jobs) | | | | | | | |
| On-the-Job Training - Oil sector - Over 10 | | 7,713 | 6,796 | 5,864 | 4,255 | 3,235 | 2,281 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Oil sector - Up to 1 | | 556,244 | 488,514 | 419,941 | 303,640 | 229,994 | 161,382 |
| year (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - 1 | | 97,447 | 91,143 | 95,492 | 99,644 | 102,327 | 141,330 |
| to 4 years (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - 4 | | 27,633 | 26,443 | 28,531 | 30,422 | 31,696 | 44,455 |
| to 10 years (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - | | 26,952 | 25,479 | 27,024 | 28,564 | 29,719 | 41,620 |
| None (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - | | 6,044 | 5,538 | 5,655 | 5,755 | 5,772 | 7,765 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - Up | | 317,648 | 296,131 | 308,678 | 321,405 | 330,249 | 456,384 |
| to 1 year (jobs) | | | | | | | |
| On-the-Job Training - Wind sector - 1 to 4 | | 51,759 | 58,606 | 62,191 | 76,037 | 78,220 | 76,599 |
| years (jobs) | | | | - | - | | |
| On-the-Job Training - Wind sector - 4 to | | 13,853 | 16,760 | 18,099 | 22,254 | 24,333 | 24,657 |
| 10 years (jobs) | | | | . | | | |
| On-the-Job Training - Wind sector - None | | 14,059 | 16,028 | 17,124 | 21,074 | 21,882 | 21,617 |
| (jobs) | | · | • | | • | • | • |
| On-the-Job Training - Wind sector - Over | | 3,088 | 3,338 | 3,462 | 4,161 | 4,037 | 3,779 |
| 10 years (jobs) | | | • | | * | | • |
| | | | | | | | |

Table 64: E+RE- scenario - IMPACTS - Jobs (continued)

| Table 64: E+RE- scenario - IMPACTS - Jobs | • | | | | | | |
|--|------|-----------|------------|---------------|-----------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-the-Job Training - Wind sector - Up to | | 173,019 | 192,674 | 204,109 | 250,048 | 253,300 | 246,295 |
| 1 year (jobs) | | | 1.000.11.1 | 1 2 2 2 2 2 2 | | 1101 000 | 1.000 |
| Related work experience - All sectors - 1 | | 1,032,181 | 1,028,146 | 1,093,272 | 1,113,061 | 1,124,392 | 1,255,295 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - All sectors - 4 | | 658,043 | 658,041 | 699,755 | 715,684 | 725,442 | 811,304 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - | | 401,506 | 405,041 | 433,875 | 442,516 | 445,997 | 499,667 |
| None (jobs) | | | | | | | |
| Related work experience - All sectors - | | 182,370 | 179,985 | 189,873 | 192,939 | 194,433 | 216,579 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - Up | | 561,837 | 561,788 | 602,295 | 612,102 | 613,776 | 690,620 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 24,432 | 31,802 | 51,686 | 53,347 | 54,747 | 69,875 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 12,623 | 15,902 | 27,189 | 28,912 | 30,450 | 39,488 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 13,956 | 17,458 | 25,959 | 24,936 | 23,845 | 30,064 |
| - None (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 3,473 | 4,247 | 7,104 | 7,467 | 7,776 | 10,138 |
| - Over 10 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 27,570 | 33,760 | 47,881 | 44,406 | 40,793 | 51,252 |
| - Up to 1 year (jobs) | | | | | | | |
| Related work experience - CO2 sector - 1 | | 2,869 | 43,804 | 38,025 | 18,068 | 27,328 | 51,225 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - 4 | | 1,986 | 30,448 | 26,294 | 12,390 | 18,757 | 35,478 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 1,242 | 19,156 | 16,427 | 7,651 | 11,598 | 22,218 |
| None (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 488 | 7,386 | 6,473 | 3,122 | 4,715 | 8,696 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - CO2 sector - | | 1,441 | 22,184 | 19,195 | 9,051 | 13,744 | 26,151 |
| Up to 1 year (jobs) | | | | | | | |
| Related work experience - Coal sector - 1 | | 25,218 | 7,000 | 4,140 | 3,577 | 3,205 | 2,638 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - Coal sector - 4 | | 14,899 | 3,852 | 2,035 | 1,784 | 1,622 | 1,354 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - Coal sector - | | 9,056 | 2,422 | 1,346 | 1,166 | 1,047 | 864 |
| None (jobs) | | | | | | | |
| Related work experience - Coal sector - | | 3,759 | 1,011 | 561 | 494 | 452 | 380 |
| Over 10 years (jobs) | | • | | | | | |
| Related work experience - Coal sector - | | 13,581 | 4,133 | 2,742 | 2,352 | 2,093 | 1,712 |
| Up to 1 year (jobs) | | -, | , | , | , | , - | , |
| Related work experience - Grid sector - 1 | | 190,960 | 215,406 | 300,246 | 357,715 | 381,302 | 414,005 |
| to 4 years (jobs) | | ., 0,, 00 | 2.0, .00 | 000,2.0 | 33.7 | 00.,002 | ,,,,, |
| Related work experience - Grid sector - 4 | | 125,143 | 141,060 | 196,473 | 233,905 | 249,141 | 270,305 |
| to 10 years (jobs) | | 120,110 | 111,000 | 170,110 | 200,700 | 2 17,1 11 | 2.0,000 |
| Related work experience - Grid sector - | | 78,437 | 88,614 | 123,699 | 147,587 | 157,537 | 171,276 |
| None (jobs) | | 10,401 | 00,014 | 120,077 | 141,501 | 101,001 | 111,210 |
| Related work experience - Grid sector - | | 32,437 | 36,583 | 50,982 | 60,730 | 64,724 | 70,264 |
| Over 10 years (jobs) | | 02,401 | 00,000 | 00,702 | 00,100 | 07,124 | 10,204 |
| Related work experience - Grid sector - | | 101,114 | 114,496 | 160,205 | 191,606 | 205,031 | 223,482 |
| Up to 1 year (jobs) | | 101,114 | 114,470 | 100,200 | 171,000 | 200,001 | 223,402 |
| Related work experience - Natural gas | | 213,832 | 186,439 | 165,531 | 160,160 | 133,948 | 110,276 |
| · · · · · · · · · · · · · · · · · · · | | 213,632 | 100,439 | 100,031 | 100,100 | 133,748 | 110,276 |
| sector - 1 to 4 years (jobs) | | 1/-0-000 | 107, 000 | 110 / / 0 | 107/1/ | 00.000 | 7/. 007 |
| Related work experience - Natural gas | | 142,303 | 124,309 | 110,468 | 107,416 | 90,030 | 74,386 |
| sector - 4 to 10 years (jobs) | | 00.007 | 70 / / 7 | /E 770 | 41.007 | E/. 100 | J. J. 010 |
| Related work experience - Natural gas | | 83,936 | 73,667 | 65,770 | 64,307 | 54,109 | 44,918 |
| sector - None (jobs) | | 00 (1) | 00.770 | 00.550 | 00.000 | 00.500 | 10.000 |
| Related work experience - Natural gas | | 38,614 | 33,442 | 29,553 | 28,288 | 23,520 | 19,223 |
| sector - Over 10 years (jobs) | | | | | | | |

Table 64: E+RE- scenario - IMPACTS - Jobs (continued)

| Tuble 64: ETTE Beetland ITH Note bobb | • | • | | | | | |
|---|------|---------|---------|---------|---------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Related work experience - Natural gas | | 100,806 | 87,791 | 78,010 | 75,381 | 63,035 | 51,984 |
| sector - Up to 1 year (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 18,749 | 22,595 | 35,100 | 52,071 | 86,122 | 140,779 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 12,163 | 14,655 | 22,761 | 33,760 | 55,826 | 91,239 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 6,331 | 7,641 | 11,886 | 17,657 | 29,243 | 47,865 |
| - None (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 3,744 | 4,514 | 7,016 | 10,413 | 17,231 | 28,179 |
| - Over 10 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 9,244 | 11,150 | 17,338 | 25,745 | 42,621 | 69,734 |
| - Up to 1 year (jobs) | | | | | | | |
| Related work experience - Oil sector - 1 to | | 301,062 | 264,533 | 227,572 | 164,527 | 124,608 | 87,357 |
| 4 years (jobs) | | | | | | | |
| Related work experience - Oil sector - 4 to | | 182,677 | 160,250 | 137,651 | 99,336 | 75,102 | 52,553 |
| 10 years (jobs) | | | | | | | |
| Related work experience - Oil sector - | | 106,461 | 93,826 | 80,890 | 58,777 | 44,741 | 31,613 |
| None (jobs) | | | | | | | |
| Related work experience - Oil sector - | | 52,538 | 46,027 | 39,527 | 28,482 | 21,514 | 15,025 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Oil sector - Up | | 147,290 | 129,295 | 110,970 | 80,353 | 60,948 | 42,966 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - Solar PV sector | | 164,836 | 154,553 | 162,287 | 170,021 | 175,560 | 243,899 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Solar PV sector | | 106,595 | 99,779 | 104,579 | 109,298 | 112,535 | 155,848 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Solar PV sector | | 67,326 | 63,205 | 66,491 | 69,756 | 72,100 | 100,288 |
| - None (jobs) | | | | | | | |
| Related work experience - Solar PV sector | | 30,190 | 27,879 | 28,713 | 29,563 | 30,069 | 41,092 |
| - Over 10 years (jobs) | | | | | | | |
| Related work experience - Solar PV sector | | 106,777 | 99,317 | 103,309 | 107,150 | 109,500 | 150,428 |
| - Up to 1 year (jobs) | | | | | | | |
| Related work experience - Wind sector - 1 | | 90,223 | 102,014 | 108,686 | 133,575 | 137,572 | 135,240 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - Wind sector - 4 | | 59,654 | 67,786 | 72,306 | 88,884 | 91,979 | 90,653 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 34,760 | 39,050 | 41,406 | 50,677 | 51,776 | 50,561 |
| None (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 17,128 | 18,895 | 19,943 | 24,379 | 24,433 | 23,583 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 54,014 | 59,662 | 62,644 | 76,057 | 76,012 | 72,910 |
| Up to 1 year (jobs) | | | | | | | |
| 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) | | 33,026 | 37,781 | 53,429 | 64,608 | 69,927 | 77,122 |
| Wage income - Natural Gas (million \$2019) | | 38,383 | 33,906 | 30,513 | 29,843 | 25,281 | 21,066 |
| Wage income - Nuclear (million \$2019) | | 3,591 | 4,432 | 7,055 | 10,731 | 18,208 | 30,550 |
| Wage income - Oil (million \$2019) | | 52,011 | 46,299 | 40,361 | 29,537 | 22,646 | 16,058 |
| Wage income - Solar (million \$2019) | | 26,383 | 25,065 | 26,700 | 28,387 | 29,758 | 42,011 |
| Wage income - Wind (million \$2019) | | 14,903 | 17,233 | 18,681 | 23,339 | 24,670 | 24,821 |
| - | | | | | | | |

Table 65: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|-----------|-----------|------|------|------|------|
| Commercial HVAC investment in 2020s - | | 1,046,837 | 1,158,815 | | | | |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Sales of cooking units - Electric | 32.5 | 36.5 | 41.3 | 53.8 | 71.2 | 81.9 | 85.6 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 67.5 | 63.5 | 58.7 | 46.2 | 28.8 | 18.1 | 14.4 |

| Table / F. F. D. assessia | PILLAR 1: Efficiency/Electrification - | On managed (a subtinued) |
|-----------------------------|--|----------------------------|
| - 19016 PD. E-R+ SERUDEIO - | · PII I AR I' FIIII:IPNI:V/FIPI:II'IIII:IIIIII - | · Gammerciai i cani inieni |

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|------|------|------|------|-------|-------|
| Sales of space heating units - Electric | 2.95 | 11.9 | 15.9 | 27.6 | 48.1 | 65.9 | 74.2 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 7.91 | 8.18 | 8.72 | 10.5 | 13.8 | 16.4 | 17.6 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Fossil (%) | 3.94 | 3.79 | 3.71 | 2.91 | 1.53 | 0.589 | 0.302 |
| Sales of space heating units - Gas Furnace | 85.2 | 76.1 | 71.7 | 59 | 36.6 | 17.1 | 7.89 |
| (%) | | | | | | | |
| Sales of water heating units - Electric | 0.385 | 1.8 | 5.78 | 17.4 | 36.6 | 51.2 | 57.3 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 3.8 | 4.53 | 6.39 | 12 | 21.9 | 30.4 | 34.4 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas Furnace | 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 |

Table 66: 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 67: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| Final energy use - Residential (PJ) | 11,788 | 11,126 | 10,656 | 10,151 | 9,457 | 8,609 | 7,786 |
| Final energy use - Transportation (PJ) | 28,030 | 26,603 | 24,463 | 22,703 | 21,315 | 19,677 | 17,739 |

Table 68: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Residential

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

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|-------|--------|--------|---------|---------|
| Light-duty vehicle capital costs - | | 0 | 8,683 | 17,455 | 59,707 | 185,491 | 271,068 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Public EV charging plugs - DC Fast (1000 | 14.4 | | 31.9 | | 147 | | 402 |
| units) | | | | | | | |
| Public EV charging plugs - L2 (1000 units) | 66.2 | | 766 | | 3,537 | | 9,670 |
| Vehicle sales - Heavy-duty - diesel (%) | 97.4 | 96 | 91.3 | 79.8 | 58.2 | 32.1 | 13.7 |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|-------|
| 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 |
| Vehicle sales - Light-duty - diesel (%) | 1.39 | 1.82 | 2.03 | 1.61 | 1.02 | 0.519 | 0.223 |
| 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 - 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 - diesel (%) | 64.8 | 62.2 | 57.7 | 49.4 | 35.6 | 19.6 | 8.37 |
| 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 - hydrogen | 0.166 | 0.485 | 1.37 | 3.58 | 7.86 | 13.2 | 17 |
| FC (%) | | | | | | | |
| Vehicle sales - Medium-duty - other (%) | 0.253 | 0.266 | 0.279 | 0.286 | 0.258 | 0.184 | 0.102 |

Table 70: E-B+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---------|---------|---------|---------|---------|---------|-----------|
| Capital invested - Biomass power plant | 0 | 0.001 | 0.009 | 0 | 0.004 | 0 | 0.001 |
| (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu allam | 0 | 0 | 0 | 0.472 | 0.167 | 0.105 | 0.397 |
| power plant (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu power | 0 | 0 | 66 | 88.9 | 162 | 87 | 36 |
| plant (billion \$2018) | | | | | | | |
| 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 - 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 - Coal (MW) | 215,959 | 52,040 | 132 | 129 | 105 | 90.8 | 47.3 |
| Installed - Ct (MW) | 146,590 | 139,058 | 120,032 | 114,037 | 120,046 | 165,945 | 194,030 |
| Installed - Geothermal (MW) | 2,392 | 2,395 | 2,420 | 2,417 | 2,420 | 2,426 | 2,446 |
| Installed - Grid battery storage (MW) | | 890 | 1,834 | 10,282 | 32,471 | 86,943 | 123,183 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Nuclear (MW) | 98,481 | 95,135 | 90,008 | 76,069 | 68,456 | 56,274 | 56,682 |
| Installed - Offshore wind (MW) | 29.3 | 1,005 | 4,962 | 13,173 | 33,174 | 90,306 | 207,350 |
| Installed - Onshore wind (MW) | 97,778 | 194,426 | 370,380 | 515,269 | 613,437 | 779,748 | 1,020,520 |
| Installed - Other (MW) | 68,061 | 57,088 | 55,241 | 53,843 | 52,087 | 51,085 | 49,630 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |
| 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 |

Table 71: E-B+ scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|-------|-------|--------|---------|---------|---------|---------|
| Biomass (TWh) | 18.1 | 21.4 | 39.6 | 23.5 | 15.6 | 6.71 | 0.45 |
| Biomass power plant (GWh) | 3,557 | 827 | 10,411 | 3,819 | 2,256 | 1,124 | 63.6 |
| Biomass w cc (TWh) | 0 | 0 | 74.1 | 174 | 356 | 454 | 493 |
| Biomass w/ccu allam power plant (GWh) | 0 | 0 | 0 | 394 | 483 | 569 | 955 |
| Biomass w/ccu power plant (GWh) | 0 | 0 | 74,108 | 173,715 | 355,539 | 453,084 | 491,647 |
| Coal (TWh) | 980 | 280 | 0.461 | 0.452 | 0.368 | 0.318 | 0.166 |
| 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 |
| Geothermal (TWh) | 14.5 | 14.5 | 14.3 | 14.2 | 13.6 | 13.6 | 13.5 |
| Hydro (TWh) | 300 | 312 | 295 | 294 | 301 | 292 | 293 |

Table 71: E-B+ scenario - PILLAR 2: Clean Electricity - Generation (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------|-------|------|-------|-------|-------|-------|-------|
| Nuclear (TWh) | 802 | 775 | 733 | 620 | 558 | 458 | 463 |
| Offshore wind (TWh) | 0.092 | 3.73 | 20.2 | 63.9 | 146 | 394 | 885 |
| Onshore wind (TWh) | 412 | 794 | 1,536 | 2,051 | 2,391 | 3,054 | 3,994 |
| 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 |

Table 72: E-B+ scenario - PILLAR 3: Clean fuels - Bioenergy

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 161,322 | 336,108 | 552,980 | 641,173 |
| Biomass input - Bio-FT w/ CC (1000 | 0 | 0 | 0 | 151 | 192 | 227 | 279 |
| tonnes) | | | | | | | |
| Biomass input - Bio-SNG w/ CC (1000 | 0 | 0 | 38.5 | 22.5 | 15.4 | 14.5 | 11.9 |
| tonnes) | | | | | | | |
| Biomass input - Biopower (1000 tonnes) | 10,249 | 24,177 | 56,258 | 40,450 | 30,444 | 12,725 | 636 |
| Biomass input - Biopower w/ cc (1000 | 0 | 0 | 44,765 | 105,109 | 214,980 | 273,940 | 297,408 |
| tonnes) | | | | | | | |
| Biomass input - Ethanol (1000 tonnes) | 129,506 | 129,506 | 129,537 | 125,006 | 67,634 | 10,261 | 905 |
| Biomass input - FT diesel (1000 tonnes) | 0 | 0 | 0 | 107 | 122 | 124 | 99.1 |
| Biomass input - Pyrolysis liquids (1000 | 0 | 0 | 0 | 212 | 316 | 1,714 | 123,715 |
| tonnes) | | | | | | | |
| Biomass input - Pyrolysis liquids w/ cc | 0 | 0 | 0 | 158 | 219 | 299 | 56,876 |
| (1000 tonnes) | | | | | | | |
| Biomass input - SNG (1000 tonnes) | 0 | 9.94 | 18.5 | 8.41 | 8.23 | 7.31 | 3.45 |
| Number of facilities - Allam power w ccu | 0 | 0 | 0 | 14 | 24 | 33 | 42 |
| (quantity) | | | | | | | |
| Number of facilities - Beccs hydrogen | 0 | 0 | 0 | 217 | 453 | 742 | 858 |
| (quantity) | | | | | | | |
| 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 - Power (quantity) | 0 | 12 | 16 | 16 | 17 | 17 | 17 |
| Number of facilities - Power ccu | 0 | 0 | 67 | 148 | 296 | 379 | 413 |
| (quantity) | | | | | | | |
| Number of facilities - Pyrolysis (quantity) | 0 | 0 | 0 | 14 | 16 | 19 | 178 |
| Number of facilities - Pyrolysis ccu | 0 | 0 | 0 | 14 | 24 | 35 | 119 |
| (quantity) | | | | | | | |
| 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 73: E-B+ scenario - PILLAR 4: CCUS - CO2 pipelines

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

Table 74: E-B+ scenario - PILLAR 4: CCUS - CO2 storage

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|--------|--------|--------|--------|--------|
| CO2 storage (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 75: E-B+ scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Aggressive | | | | | | | -38,876 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tC02e/y) | | | | | | | 100.007 |
| Carbon sink potential - Aggressive | | | | | | | -188,807 |
| deployment - Cropland measures (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | 0 |
| deployment - Cropland to woody energy crops (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | 0 |
| deployment - Pasture to energy crops (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -6,794 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -234,477 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -38,876 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tC02e/y) Carbon sink potential - Moderate | | | | | | | -98,674 |
| deployment - Cropland measures (1000 | | | | | | | -98,674 |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | 0 |
| deployment - Cropland to woody energy | | | | | | | ŭ |
| crops (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | 0 |
| deployment - Pasture to energy crops | | | | | | | |
| (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -3,397 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | 1/00/7 |
| Carbon sink potential - Moderate | | | | | | | -140,947 |
| deployment - Total (1000 tC02e/y) Land impacted for carbon sink - | | | | | | | 01 100 |
| Aggressive deployment - Corn-ethanol to | | | | | | | 21,138 |
| energy grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 313,710 |
| Aggressive deployment - Cropland | | | | | | | 0.07.10 |
| measures (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 4,087 |
| Aggressive deployment - Cropland to | | | | | | | |
| woody energy crops (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 14,777 |
| Aggressive deployment - Pasture to | | | | | | | |
| energy crops (1000 hectares) Land impacted for carbon sink - | | | | | | | 11,710 |
| Aggressive deployment - Permanent | | | | | | | 11,710 |
| conservation cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 365,421 |
| Aggressive deployment - Total (1000 | | | | | | | 000,121 |
| hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 21,138 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 66,454 |
| deployment - Cropland measures (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 4,087 |
| deployment - Cropland to woody energy | | | | | | | |
| crops (1000 hectares) | | | | | | | |

Table 75: E-B+ scenario - PILLAR 6: Land sinks - Agriculture (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Land impacted for carbon sink - Moderate | | | | | | | 14,777 |
| deployment - Pasture to energy crops | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 5,855 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 112,310 |
| deployment - Total (1000 hectares) | | | | | | | |

| Table 76: E-B+ scenario - PILLAR 6: Land s Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - High - Accelerate | | | | | | | -48,900 |
| regeneration (1000 tCO2e/y) | | | | | | | _, |
| Carbon sink potential - High - All (not | | | | | | | - |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1,535,900 |
| Carbon sink potential - High - Avoid | | | | | | | -84,000 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Extend | | | | | | | -302,000 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Improve | | | | | | | -57,000 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | - |
| retention of HWP (1000 tCO2e/y) | | | | | | | 300,000 |
| Carbon sink potential - High - Increase | | | | | | | -60,000 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -242,000 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | - |
| pasture (1000 tCO2e/y) | | | | | | | 264,000 |
| Carbon sink potential - High - Restore | | | | | | | -178,000 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Accelerate | | | | | | | -24,500 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - All (not | | | | | | | |
| counting overlap) (1000 tCO2e/y) | | | | | | | 505,500 |
| Carbon sink potential - Low - Avoid | | | | | | | -14,000 |
| deforestation (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Low - Extend | | | | | | | -116,000 |
| rotation length (1000 tC02e/y) | | | | | | | 00.000 |
| Carbon sink potential - Low - Improve | | | | | | | -29,000 |
| plantations (1000 tCO2e/y) | | | | | | | 100.000 |
| Carbon sink potential - Low - Increase | | | | | | | -100,000 |
| retention of HWP (1000 tC02e/y) | | | | | | | 01.000 |
| Carbon sink potential - Low - Increase | | | | | | | -21,000 |
| trees outside forests (1000 tC02e/y) | | | | | | | 101.000 |
| Carbon sink potential - Low - Reforest | | | | | | | -121,000 |
| cropland (1000 tCO2e/y) | | | | | | | 00.000 |
| Carbon sink potential - Low - Reforest | | | | | | | -20,000 |
| pasture (1000 tC02e/y) | | | | | | | -60,000 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) | | | | | | | -60,000 |
| Carbon sink potential - Mid - Accelerate | | | | | | | -36,700 |
| regeneration (1000 tCO2e/y) | | | | | | | -36,700 |
| Carbon sink potential - Mid - All (not | | | | | | | |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1,020,200 |
| Carbon sink potential - Mid - Avoid | | | | | | | -49,000 |
| deforestation (1000 tCO2e/y) | | | | | | | -47,000 |
| Carbon sink potential - Mid - Extend | | | | | + | | -209,000 |
| rotation length (1000 tC02e/y) | | | | | | | -207,000 |

Table 76: E-B+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|----------|
| Carbon sink potential - Mid - Improve | | | | | | | -42,500 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | - |
| retention of HWP (1000 tCO2e/y) | | | | | | | 200,000 |
| Carbon sink potential - Mid - Increase | | | | | | | -40,500 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -181,500 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -142,000 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Restore | | | | | | | -119,000 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 8,000 |
| High - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 11,373 |
| High - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 154,000 |
| High - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 21,000 |
| High - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| High - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 5,700 |
| High - Increase trees outside forests | | | | | | | , |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 16,000 |
| High - Reforest cropland (1000 hectares) | | | | | | | , |
| Land impacted for carbon sink potential - | | | | | | | 7,500 |
| High - Reforest pasture (1000 hectares) | | | | | | | 1,000 |
| Land impacted for carbon sink potential - | | | | | | | 59,000 |
| High - Restore productivity (1000 | | | | | | | 07,000 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | + | | | 282,573 |
| High - Total impacted (over 30 years) | | | | | | | 202,010 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 4,000 |
| Low - Accelerate regeneration (1000 | | | | | | | 4,000 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 10 /77 |
| | | | | | | | 10,677 |
| Low - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | 50.000 |
| Land impacted for carbon sink potential - | | | | | | | 59,000 |
| Low - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 10,500 |
| Low - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| Low - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,000 |
| Low - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 8,000 |
| | | | | | | | |

Table 76: E-B+ scenario - PILLAR 6: Land sinks - Forests (continued)

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

Table 77: E-B+ 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 78: E-B+ scenario - IMPACTS - Fossil fuel industries

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

Table 79: E-B+ scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|--------|------|------|------|------|------|
| Monetary damages from air pollution - | | 22,661 | 29.5 | 28.3 | 24.2 | 16.6 | 1.24 |
| Coal (million 2019\$) | | | | | | | |

Table 79: E-B+ scenario - IMPACTS - Health (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|---------|---------|---------|--------|--------|--------|
| Monetary damages from air pollution - | | 12,872 | 7,230 | 4,270 | 3,134 | 1,787 | 737 |
| Natural Gas (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 104,258 | 107,043 | 105,711 | 96,553 | 77,882 | 54,050 |
| Transportation (million 2019\$) | | | | | | | |
| Premature deaths from air pollution - | | 2,559 | 3.33 | 3.2 | 2.73 | 1.88 | 0.14 |
| Coal (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1,453 | 816 | 482 | 354 | 202 | 83.2 |
| Natural Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 11,726 | 12,039 | 11,890 | 10,859 | 8,759 | 6,079 |
| Transportation (deaths) | | | | | | | |

Table 80: E-B+ scenario - IMPACTS - Jobs

| Table 80: 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) | | 581,252 | 743,826 | 811,795 | 829,966 | 994,703 | 1,303,457 |
| By economic sector - Manufacturing | | 645,629 | 844,956 | 761,043 | 623,121 | 736,461 | 965,790 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 457,822 | 349,136 | 269,459 | 206,374 | 156,952 | 92,010 |
| By economic sector - Other (jobs) | | 56,622 | 81,960 | 98,073 | 110,779 | 143,437 | 220,993 |
| By economic sector - Pipeline (jobs) | | 46,238 | 52,377 | 44,732 | 34,806 | 32,366 | 31,958 |
| By economic sector - Professional (jobs) | | 330,225 | 397,849 | 470,432 | 536,936 | 663,638 | 863,741 |
| By economic sector - Trade (jobs) | | 298,942 | 314,042 | 335,172 | 352,941 | 407,909 | 513,328 |
| By economic sector - Utilities (jobs) | | 468,318 | 554,761 | 621,122 | 646,604 | 823,091 | 1,082,332 |
| By education level - All sectors - | | 877,870 | 1,035,603 | 1,065,286 | 1,046,053 | 1,250,728 | 1,623,219 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - All sectors - | | 644,751 | 720,709 | 732,434 | 720,161 | 841,870 | 1,058,087 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - All sectors - Doctoral | | 21,373 | 23,773 | 25,558 | 26,898 | 31,776 | 40,088 |
| degree (jobs) | | | | | | | |
| By education level - All sectors - High | | 1,221,443 | 1,432,217 | 1,472,040 | 1,434,199 | 1,689,837 | 2,167,284 |
| school diploma or less (jobs) | | | | | | | |
| By education level - All sectors - Masters | | 151,786 | 168,894 | 175,582 | 177,183 | 208,810 | 263,874 |
| or professional degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 16,090 | 19,588 | 35,004 | 52,412 | 68,012 | 86,972 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Biomass sector - | | 14,783 | 17,693 | 32,769 | 53,142 | 71,318 | 90,755 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Biomass sector - | | 726 | 921 | 1,873 | 3,279 | 4,550 | 5,818 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Biomass sector - High | | 48,466 | 59,456 | 90,901 | 114,020 | 132,819 | 166,652 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Biomass sector - | | 4,070 | 5,008 | 9,386 | 15,369 | 20,750 | 26,476 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - CO2 sector - | | 2,575 | 39,321 | 33,632 | 15,862 | 23,943 | 45,506 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - CO2 sector - | | 1,286 | 18,604 | 16,689 | 8,614 | 12,834 | 22,147 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - CO2 sector - Doctoral | | 26 | 337 | 337 | 205 | 301 | 437 |
| degree (jobs) | | 2.121 | | | | | |
| By education level - CO2 sector - High | | 3,181 | 48,591 | 41,726 | 19,777 | 29,903 | 56,834 |
| school diploma or less (jobs) | | | | 2 = 12 | | | |
| By education level - CO2 sector - Masters | | 287 | 4,086 | 3,719 | 1,970 | 2,924 | 4,900 |
| or professional degree (jobs) | | 21 ((2 | F 044 | 0.007 | 0 (1 (| 0.050 | 0.070 |
| By education level - Coal sector - | | 21,668 | 5,811 | 2,994 | 2,616 | 2,352 | 2,073 |
| Associates degree or some college (jobs) | | | 2 = 1 = | | | | 1000 |
| By education level - Coal sector - | | 14,117 | 3,542 | 1,704 | 1,540 | 1,431 | 1,302 |
| Bachelors degree (jobs) | | | 400 | | | | / = |
| By education level - Coal sector - Doctoral | | 517 | 128 | 51.8 | 48.5 | 46.6 | 43.7 |
| degree (jobs) | | | | | | | |

Table 80: E-B+ scenario - IMPACTS - Jobs (continued)

| Table 80: E-B+ scenario - IMPACTS - Jobs | • | • | | | | | |
|---|------|---------|---------|----------|---------|---|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By education level - Coal sector - High | | 30,641 | 9,079 | 5,799 | 4,970 | 4,379 | 3,778 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Coal sector - Masters | | 3,469 | 866 | 372 | 338 | 317 | 290 |
| or professional degree (jobs) | | | | | | | |
| By education level - Grid sector - | | 174,294 | 229,691 | 295,982 | 334,579 | 458,099 | 617,313 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Grid sector - | | 99,880 | 130,767 | 167,424 | 188,060 | 255,884 | 342,705 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Grid sector - Doctoral | | 2,880 | 3,707 | 4,666 | 5,153 | 6,893 | 9,076 |
| degree (jobs) | | | | | | | |
| By education level - Grid sector - High | | 222,876 | 295,197 | 382,304 | 434,320 | 597,625 | 809,331 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Grid sector - Masters | | 25,133 | 32,802 | 41,868 | 46,886 | 63,605 | 84,934 |
| or professional degree (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 176,526 | 133,696 | 100,826 | 88,327 | 70,666 | 53,110 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 122,977 | 91,161 | 66,596 | 55,978 | 43,583 | 31,999 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 4,086 | 2,999 | 2,155 | 1,778 | 1,363 | 982 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 216,010 | 163,684 | 122,940 | 106,082 | 84,259 | 63,187 |
| High school diploma or less (jobs) | | | | | | | |
| By education level - Natural gas sector - | | 30,123 | 22,202 | 16,129 | 13,537 | 10,512 | 7,683 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 13,672 | 13,246 | 13,299 | 10,140 | 9,242 | 12,046 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 14,779 | 14,284 | 14,307 | 10,884 | 9,897 | 12,870 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 648 | 622 | 619 | 468 | 423 | 547 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Nuclear sector - High | | 16,972 | 16,487 | 16,595 | 12,686 | 11,592 | 15,145 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 4,000 | 3,860 | 3,859 | 2,931 | 2,661 | 3,455 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - Oil sector - Associates | | 206,247 | 184,787 | 166,011 | 147,370 | 125,808 | 78,548 |
| degree or some college (jobs) | | , | - , - | , . | , - | -, | -,- |
| By education level - Oil sector - Bachelors | | 212,707 | 187,569 | 165,669 | 144,398 | 121,155 | 74,021 |
| degree (jobs) | | , - | . , | | , | , | ,- |
| By education level - Oil sector - Doctoral | | 6,871 | 6,092 | 5,410 | 4,741 | 4,004 | 2,456 |
| degree (jobs) | | -,-: | -, | 2, | ., | ., | _, |
| By education level - Oil sector - High | | 318,839 | 287,355 | 259,740 | 232,096 | 199,165 | 125,368 |
| school diploma or less (jobs) | | 0.0,007 | 20.,000 | 2077. 10 | 202,070 | .,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 0,000 |
| By education level - Oil sector - Masters or | | 48,235 | 42,333 | 37,202 | 32,247 | 26,927 | 16,337 |
| professional degree (jobs) | | 40,200 | 42,000 | 01,202 | 02,241 | 20,721 | 10,001 |
| By education level - Solar PV sector - | | 169,748 | 242,412 | 231,753 | 219,532 | 266,559 | 420,666 |
| Associates degree or some college (jobs) | | 107,140 | 242,412 | 201,100 | 217,002 | 200,007 | 420,000 |
| By education level - Solar PV sector - | | 98,823 | 142,974 | 137,113 | 130,627 | 160,501 | 256,096 |
| Bachelors degree (jobs) | | 70,020 | 142,714 | 131,113 | 130,021 | 100,501 | 230,070 |
| By education level - Solar PV sector - | | 3,138 | 4,497 | 4,741 | 4,899 | 6,051 | 9,716 |
| Doctoral degree (jobs) | | 3,130 | 4,471 | 4,141 | 4,077 | 0,031 | 2,110 |
| By education level - Solar PV sector - High | | 238,365 | 337,753 | 319,518 | 298,959 | 359,451 | 561,710 |
| | | 238,363 | 331,133 | 319,516 | 296,939 | 339,431 | 361,710 |
| school diploma or less (jobs) By education level - Solar PV sector - | | 21,281 | 30,826 | 30,763 | 30,417 | 37,639 | 60,506 |
| | | 21,201 | 30,826 | 30,763 | 30,417 | 31,039 | 60,506 |
| Masters or professional degree (jobs) | | 07.050 | 1/7.051 | 105.707 | 175 010 | 00/.0// | 00/005 |
| By education level - Wind sector - | | 97,050 | 167,051 | 185,786 | 175,213 | 226,046 | 306,985 |
| Associates degree or some college (jobs) | | /F 000 | 11 1 11 | 1001/0 | 107.010 | 1/50/7 | 007 101 |
| By education level - Wind sector - | | 65,399 | 114,114 | 130,163 | 126,918 | 165,267 | 226,191 |
| Bachelors degree (jobs) | | 0.7.01 | | F 700 | / 007 | 0.4.4 | 44 040 |
| By education level - Wind sector - | | 2,481 | 4,470 | 5,703 | 6,327 | 8,146 | 11,013 |
| Doctoral degree (jobs) | | | | | | | |

Table 80: E-B+ scenario - IMPACTS - Jobs (continued)

| Table 80: E-B+ scenario - IMPACTS - Jobs (| continued | • | | | | | |
|--|-----------|---------|---------|----------|-----------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By education level - Wind sector - High | | 126,093 | 214,615 | 232,517 | 211,290 | 270,645 | 365,280 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Wind sector - Masters | | 15,188 | 26,911 | 32,282 | 33,487 | 43,476 | 59,293 |
| or professional degree (jobs) | | | | | | | |
| 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) | | 525,062 | 692,164 | 892,244 | 1,008,997 | 1,382,106 | 1,863,359 |
| By resource sector - Natural Gas (jobs) | | 549,721 | 413,742 | 308,646 | 265,702 | 210,383 | 156,961 |
| By resource sector - Nuclear (jobs) | | 50,072 | 48,499 | 48,680 | 37,109 | 33,816 | 44,064 |
| By resource sector - Oil (jobs) | | 792,899 | 708,136 | 634,032 | 560,853 | 477,059 | 296,731 |
| By resource sector - Solar (jobs) | | 531,355 | 758,462 | 723,888 | 684,434 | 830,201 | 1,308,693 |
| By resource sector - Wind (jobs) | | 306,212 | 527,160 | 586,451 | 553,235 | 713,579 | 968,761 |
| Median wages - Annual - Biomass (\$2019 | | 51,941 | 53,608 | 57,044 | 60,729 | 63,277 | 64,544 |
| per job) | | - , | , | , , | | , | , , |
| Median wages - Annual - CO2 (\$2019 per | | 62,479 | 62,742 | 64,197 | 66,395 | 67,287 | 66,879 |
| job) | | - , | • | , | ,- | , - | ,- |
| Median wages - Annual - Coal (\$2019 per | | 60,506 | 59,389 | 55,630 | 56,524 | 57,468 | 58,461 |
| job) | | 00,000 | | | , | ., | |
| Median wages - Annual - Grid (\$2019 per | | 62,539 | 63,375 | 64,248 | 65,159 | 66,110 | 67,102 |
| job) | | 02,007 | 00,010 | 0 1,2 10 | 00,107 | 30,110 | 01,102 |
| Median wages - Annual - Natural Gas | | 66,255 | 67,115 | 67,811 | 68,308 | 69,006 | 69,777 |
| (\$2019 per job) | | 00,200 | 01,110 | 01,011 | 00,000 | 07,000 | 07,111 |
| Median wages - Annual - Nuclear (\$2019 | | 71,486 | 73,188 | 74,974 | 76,846 | 78,808 | 80,864 |
| per job) | | 11,400 | 13,100 | 14,714 | 10,040 | 10,000 | 00,004 |
| Median wages - Annual - Oil (\$2019 per | | 65,828 | 66,678 | 67,513 | 68,322 | 69,194 | 69,924 |
| job) | | 03,020 | 00,010 | 01,515 | 00,322 | 07,174 | 09,924 |
| Median wages - Annual - Solar (\$2019 per | | 55,404 | 56,085 | 57,168 | 58,323 | 59,248 | 60,236 |
| job) | | 33,404 | 30,063 | 31,100 | 30,323 | 37,240 | 00,230 |
| Median wages - Annual - Wind (\$2019 per | | 58,080 | 59,100 | 60,914 | 63,241 | 64,158 | 65,104 |
| | | 56,060 | 59,100 | 60,914 | 63,241 | 64,136 | 65,104 |
| job) | | 0.700 | 10 500 | 10 / 07 | 07.700 | 0/ 00/ | / 0 / 00 |
| On-Site or In-Plant Training - Biomass | | 8,490 | 10,509 | 18,437 | 26,783 | 34,224 | 43,693 |
| sector - 1 to 4 years (jobs) | | 0.777 | 0.007 | / 11 / | 0.707 | 10 / / 0 | 1/ 000 |
| On-Site or In-Plant Training - Biomass | | 2,644 | 3,234 | 6,114 | 9,424 | 12,463 | 16,088 |
| sector - 4 to 10 years (jobs) | | 10 (00 | 1/0/1 | 00107 | / 0 445 | F0 077 | (7,170 |
| On-Site or In-Plant Training - Biomass | | 13,603 | 16,961 | 29,104 | 42,115 | 53,377 | 67,470 |
| sector - None (jobs) | | 507 | /74 | 1.075 | 1.00 | 10/0 | 0 / 00 |
| On-Site or In-Plant Training - Biomass | | 586 | 671 | 1,075 | 1,486 | 1,863 | 2,403 |
| sector - Over 10 years (jobs) | | 50.010 | 74.004 | 115.007 | 450 /4/ | 405 504 | 0.7.010 |
| On-Site or In-Plant Training - Biomass | | 58,813 | 71,291 | 115,204 | 158,414 | 195,521 | 247,019 |
| sector - Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 1,357 | 20,707 | 17,740 | 8,386 | 12,664 | 24,047 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 668 | 10,330 | 8,747 | 4,038 | 6,119 | 11,913 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 1,126 | 16,898 | 14,719 | 7,184 | 10,807 | 19,874 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 79.4 | 1,229 | 1,037 | 475 | 720 | 1,408 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | 4,125 | 61,774 | 53,861 | 26,345 | 39,594 | 72,583 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 10,991 | 3,009 | 1,599 | 1,387 | 1,238 | 1,082 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 4,217 | 1,054 | 430 | 373 | 332 | 289 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 10,380 | 2,741 | 1,420 | 1,262 | 1,154 | 1,034 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 508 | 124 | 47.4 | 42.2 | 38.6 | 34.7 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 44,315 | 12,498 | 7,424 | 6,450 | 5,763 | 5,046 |
| Up to 1 year (jobs) | | , 5.0 | , | , | -, | | -,,,,,, |
| - p (1-40) | | | | | | <u> </u> | |

Table 80: E-B+ scenario - IMPACTS - Jobs (continued)

| Table 80: E-B+ scenario - IMPACTS - Jobs (| | | | | | | |
|---|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - Grid sector - | | 90,688 | 119,702 | 154,493 | 174,915 | 239,868 | 323,746 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 39,829 | 52,560 | 67,820 | 76,766 | 105,246 | 142,011 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 79,958 | 105,169 | 135,271 | 152,642 | 208,641 | 280,703 |
| None (jobs) | | · | , | , | | | |
| On-Site or In-Plant Training - Grid sector - | | 5,163 | 6,809 | 8,781 | 9,933 | 13,610 | 18,352 |
| Over 10 years (jobs) | | 37.33 | 0,007 | 3,.3. | 7,700 | .5,5.5 | .5,552 |
| On-Site or In-Plant Training - Grid sector - | | 309,424 | 407,925 | 525,879 | 594,741 | 814,741 | 1,098,547 |
| Up to 1 year (jobs) | | 007,121 | 101,720 | 020,017 | 0, 1,1 11 | 0.1,1.11 | 1,070,011 |
| On-Site or In-Plant Training - Natural gas | | 92,637 | 70,073 | 52,690 | 45,840 | 36,543 | 27,423 |
| sector - 1 to 4 years (jobs) | | 72,001 | 10,010 | 02,070 | 40,040 | 00,040 | 21,420 |
| On-Site or In-Plant Training - Natural gas | | 41,127 | 31,357 | 23,855 | 21,069 | 16,949 | 12,811 |
| sector - 4 to 10 years (jobs) | | 41,121 | 31,331 | 25,055 | 21,007 | 10,747 | 12,011 |
| On-Site or In-Plant Training - Natural gas | | 87,524 | 65,527 | 48,636 | 41,762 | 32,988 | 24,543 |
| sector - None (jobs) | | 61,524 | 03,321 | 40,030 | 41,102 | 32,700 | 24,545 |
| On-Site or In-Plant Training - Natural gas | | 4,878 | 3,747 | 2,877 | 2,572 | 2,083 | 1,580 |
| sector - Over 10 years (jobs) | | 4,010 | 3,141 | 2,011 | 2,512 | 2,063 | 1,560 |
| | | 323,555 | 0/ 0 000 | 100 500 | 157 750 | 101 000 | 90,603 |
| On-Site or In-Plant Training - Natural gas | | 323,555 | 243,038 | 180,589 | 154,459 | 121,820 | 90,603 |
| sector - Up to 1 year (jobs) | | 7,000 | 71/5 | 7000 | F / OF | F 010 | (5 (0 |
| On-Site or In-Plant Training - Nuclear | | 7,389 | 7,165 | 7,200 | 5,495 | 5,013 | 6,540 |
| sector - 1 to 4 years (jobs) | | 0 (7) | 0.500 | 0.405 | 1.007 | 1.010 | 0.077 |
| On-Site or In-Plant Training - Nuclear | | 2,674 | 2,593 | 2,605 | 1,987 | 1,813 | 2,364 |
| sector - 4 to 10 years (jobs) | | 0.070 | 0 (70 | 0.407 | | , , , , , | 7.050 |
| On-Site or In-Plant Training - Nuclear | | 8,963 | 8,673 | 8,697 | 6,623 | 6,030 | 7,850 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 251 | 243 | 244 | 186 | 169 | 220 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 30,796 | 29,826 | 29,935 | 22,818 | 20,791 | 27,089 |
| sector - Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - 1 | | 116,834 | 104,736 | 94,131 | 83,578 | 71,372 | 44,546 |
| to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 41,199 | 37,215 | 33,709 | 30,174 | 25,955 | 16,347 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 127,669 | 113,154 | 100,523 | 88,217 | 74,442 | 45,938 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 4,563 | 4,197 | 3,868 | 3,520 | 3,075 | 1,964 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - | | 502,634 | 448,835 | 401,801 | 355,364 | 302,214 | 187,936 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 85,449 | 121,254 | 115,992 | 109,769 | 132,480 | 207,850 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 30,692 | 42,579 | 42,649 | 41,929 | 50,048 | 77,768 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 90,794 | 129,859 | 124,146 | 117,619 | 142,962 | 225,796 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 4,264 | 6,037 | 5,821 | 5,548 | 6,693 | 10,498 |
| sector - Over 10 years (jobs) | | · | | | | , | , |
| On-Site or In-Plant Training - Solar PV | | 320,155 | 458,733 | 435,280 | 409,568 | 498,019 | 786,781 |
| sector - Up to 1 year (jobs) | | | | | , | .,. | |
| On-Site or In-Plant Training - Total jobs - 1 | | 461,970 | 539,816 | 554,403 | 543,290 | 645,189 | 829,946 |
| to 4 years (jobs) | | 101,710 | 007,010 | 001,100 | 0 10,270 | 0 10,107 | 027,710 |
| On-Site or In-Plant Training - Total jobs - 4 | | 179,918 | 210,123 | 220,728 | 221,617 | 264,025 | 339,327 |
| to 10 years (jobs) | | 117,710 | 2.0,.20 | 220,120 | 221,011 | 20 1,020 | 007,021 |
| On-Site or In-Plant Training - Total jobs - | | 473,170 | 550,697 | 564,986 | 554,651 | 656,003 | 843,945 |
| None (jobs) | | 713,110 | 000,071 | 304,700 | 554,051 | 000,000 | 040,740 |
| On-Site or In-Plant Training - Total jobs - | | 22,749 | 27,290 | 28,542 | 28,393 | 34,180 | 44,452 |
| Over 10 years (jobs) | | 22,147 | 21,270 | 20,342 | 20,373 | 34,100 | 44,432 |
| On-Site or In-Plant Training - Total jobs - | | 1,779,416 | 2,053,268 | 2,102,239 | 2,056,543 | 2,423,624 | 3,094,883 |
| | | 1,117,410 | 2,000,208 | 2,102,239 | 2,000,043 | 2,423,024 | 3,074,883 |
| Up to 1 year (jobs) | | | | | | | |

Table 80: E-B+ scenario - IMPACTS - Jobs (continued)

| Table 80: E-B+ scenario - IMPACTS - Jobs (| | • | | | | | |
|--|------|-----------|-------------|-----------|-----------|-------------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - Wind sector | | 48,136 | 82,662 | 92,122 | 87,136 | 111,787 | 151,018 |
| - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Wind sector | | 16,866 | 29,202 | 34,798 | 35,857 | 45,100 | 59,736 |
| - 4 to 10 years (jobs) | | 50.450 | 04.745 | 400 / 74 | 07.007 | 105 (00 | 470 700 |
| On-Site or In-Plant Training - Wind sector | | 53,152 | 91,715 | 102,471 | 97,226 | 125,603 | 170,738 |
| - None (jobs) | | 0.457 | , , , , , , | , 700 | | 5.000 | 7000 |
| On-Site or In-Plant Training - Wind sector | | 2,457 | 4,233 | 4,792 | 4,631 | 5,928 | 7,992 |
| - Over 10 years (jobs) | | 405 (00 | 010.01.0 | 050010 | 000 005 | 1054/4 | |
| On-Site or In-Plant Training - Wind sector | | 185,600 | 319,348 | 352,268 | 328,385 | 425,161 | 579,277 |
| - Up to 1 year (jobs) | | 500 / 00 | (00 (10 | 7000/5 | / OF 701 | 0077/0 | 10///50 |
| On-the-Job Training - All sectors - 1 to 4 | | 589,423 | 689,612 | 708,945 | 695,721 | 827,749 | 1,066,650 |
| years (jobs) On-the-Job Training - All sectors - 4 to 10 | | 1/0.0/1 | 000 000 | 010 101 | 01/ 0/0 | 057107 | 000 57 0 |
| | | 169,241 | 200,282 | 212,181 | 214,269 | 257,137 | 333,548 |
| years (jobs) | | 1/1 05/ | 10/ 0/1 | 100 /10 | 107 7 7 0 | 010 007 | 000 000 |
| On-the-Job Training - All sectors - None | | 161,856 | 184,861 | 189,418 | 186,460 | 219,037 | 280,333 |
| (jobs) On-the-Job Training - All sectors - Over 10 | | 00 221 | 34,763 | 2/. / / 0 | 32,822 | 38,443 | 49,510 |
| = | | 29,331 | 34,763 | 34,648 | 32,822 | 36,443 | 49,510 |
| years (jobs) On-the-Job Training - All sectors - Up to 1 | | 1,967,372 | 2,271,676 | 0.005.707 | 0.075.000 | 0 / 00 / 5/ | 3,422,512 |
| | | 1,961,312 | 2,211,010 | 2,325,707 | 2,275,223 | 2,680,656 | 3,422,312 |
| year (jobs) On-the-Job Training - Biomass sector - 1 | | 9,286 | 11,590 | 21,134 | 31,640 | 41,117 | 52,685 |
| to 4 years (jobs) | | 9,200 | 11,590 | 21,134 | 31,040 | 41,117 | 52,005 |
| On-the-Job Training - Biomass sector - 4 | | 2,125 | 2,696 | 5,302 | 8,200 | 10,872 | 14,064 |
| to 10 years (jobs) | | 2,125 | 2,090 | 5,302 | 0,200 | 10,612 | 14,064 |
| On-the-Job Training - Biomass sector - | | 5,236 | 6,088 | 10,105 | 14,671 | 18,626 | 23,562 |
| None (jobs) | | 5,230 | 0,000 | 10,103 | 14,071 | 10,020 | 23,302 |
| On-the-Job Training - Biomass sector - | | 600 | 692 | 1,143 | 1,614 | 2,049 | 2,648 |
| Over 10 years (jobs) | | 800 | 092 | 1,143 | 1,014 | 2,049 | 2,040 |
| On-the-Job Training - Biomass sector - Up | | 66,889 | 81,601 | 132,250 | 182,098 | 224,785 | 283,714 |
| to 1 year (jobs) | | 00,007 | 01,001 | 132,230 | 102,070 | 224,103 | 203,114 |
| On-the-Job Training - CO2 sector - 1 to 4 | | 1,805 | 27,584 | 23,594 | 11,121 | 16,798 | 31,982 |
| years (jobs) | | 1,003 | 21,304 | 23,374 | 11,121 | 10,1 70 | 31,902 |
| On-the-Job Training - CO2 sector - 4 to 10 | | 672 | 10,456 | 8,805 | 4,017 | 6,099 | 12,021 |
| years (jobs) | | 012 | 10,400 | 0,000 | 4,011 | 0,077 | 12,021 |
| On-the-Job Training - CO2 sector - None | | 346 | 5,127 | 4,521 | 2,256 | 3,387 | 6,100 |
| (jobs) | | 040 | 0,121 | 7,021 | 2,200 | 0,001 | 0,100 |
| On-the-Job Training - CO2 sector - Over | | 73.6 | 1,117 | 968 | 466 | 705 | 1,324 |
| 10 years (jobs) | | 10.0 | ., | 700 | | | .,62 . |
| On-the-Job Training - CO2 sector - Up to 1 | | 4,460 | 66,655 | 58,216 | 28,568 | 42,915 | 78,399 |
| year (jobs) | | 1, 100 | 00,000 | 00,210 | 20,000 | 12,710 | 10,077 |
| On-the-Job Training - Coal sector - 1 to 4 | | 13,959 | 3,773 | 1,915 | 1,664 | 1,488 | 1,303 |
| years (jobs) | | ,. | ,,,,, | | ,,,,,, | ,,,,,, | ,,,,, |
| On-the-Job Training - Coal sector - 4 to 10 | | 4,129 | 1,040 | 423 | 364 | 321 | 278 |
| years (jobs) | | ., | ,,,,,, | | | - | |
| On-the-Job Training - Coal sector - None | | 3,482 | 920 | 508 | 449 | 409 | 364 |
| (jobs) | | -, - | | | | | |
| On-the-Job Training - Coal sector - Over | | 473 | 131 | 70.7 | 63.5 | 58.8 | 53.4 |
| 10 years (jobs) | | | | | | | |
| On-the-Job Training - Coal sector - Up to 1 | | 48,368 | 13,561 | 8,004 | 6,974 | 6,249 | 5,487 |
| year (jobs) | | · | , | | | , | · |
| On-the-Job Training - Grid sector - 1 to 4 | | 117,947 | 155,605 | 200,730 | 227,151 | 311,345 | 420,005 |
| years (jobs) | | • | , | | , | , | , |
| On-the-Job Training - Grid sector - 4 to 10 | | 40,085 | 52,932 | 68,343 | 77,406 | 106,189 | 143,370 |
| years (jobs) | | | | | | , - | , |
| On-the-Job Training - Grid sector - None | | 25,697 | 33,828 | 43,548 | 49,185 | 67,293 | 90,622 |
| (jobs) | | -, | , | | ., | | -, |
| On-the-Job Training - Grid sector - Over | | 4,208 | 5,558 | 7,177 | 8,131 | 11,159 | 15,072 |
| 10 years (jobs) | | ,==3 | | | | | -, |
| On-the-Job Training - Grid sector - Up to 1 | | 337,124 | 444,243 | 572,445 | 647,124 | 886,121 | 1,194,291 |
| year (jobs) | | | ',= ', | | | | , .,, |
| , U) | | | | 1 | | l . | |

Table 80: E-B+ scenario - IMPACTS - Jobs (continued)

| Table 80: E-B+ scenario - IMPACTS - Jobs | • | - | | | | | |
|---|------|--------------------------|-----------|-----------|-----------|-----------|---------------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-the-Job Training - Natural gas sector - | | 121,834 | 92,143 | 69,337 | 60,467 | 48,262 | 36,243 |
| 1 to 4 years (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 39,144 | 29,923 | 22,892 | 20,410 | 16,507 | 12,526 |
| 4 to 10 years (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 28,684 | 21,298 | 15,625 | 13,203 | 10,325 | 7,627 |
| None (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 5,223 | 3,920 | 2,912 | 2,479 | 1,953 | 1,456 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 354,836 | 266,458 | 197,880 | 169,143 | 133,336 | 99,109 |
| Up to 1 year (jobs) | | | | | | | |
| On-the-Job Training - Nuclear sector - 1 to | | 9,694 | 9,400 | 9,445 | 7,207 | 6,574 | 8,575 |
| 4 years (jobs) | | | | | | - | - |
| On-the-Job Training - Nuclear sector - 4 | | 2,338 | 2,267 | 2,278 | 1,739 | 1,586 | 2,070 |
| to 10 years (jobs) | | , | , - | , - | , - | , | , |
| On-the-Job Training - Nuclear sector - | | 3,363 | 3,256 | 3,267 | 2,489 | 2,267 | 2,953 |
| None (jobs) | | 0,000 | 0,200 | 0,20. | 2,107 | 2,20. | 2,700 |
| On-the-Job Training - Nuclear sector - | | 521 | 506 | 508 | 388 | 354 | 463 |
| Over 10 years (jobs) | | 321 | 300 | 300 | 000 | 004 | 700 |
| On-the-Job Training - Nuclear sector - Up | | 34,156 | 33,071 | 33,182 | 25,286 | 23,033 | 30,003 |
| to 1 year (jobs) | | 34,130 | 33,011 | 33,102 | 23,200 | 23,033 | 30,003 |
| On-the-Job Training - Oil sector - 1 to 4 | | 144,508 | 129,357 | 116,100 | 102,947 | 87,812 | 54,740 |
| | | 144,506 | 129,331 | 110,100 | 102,941 | 01,012 | 54,140 |
| years (jobs) | | 07.107 | 00.001 | 00.017 | 05 107 | 01 / 07 | 10.770 |
| On-the-Job Training - Oil sector - 4 to 10 | | 34,136 | 30,881 | 28,017 | 25,127 | 21,637 | 13,669 |
| years (jobs) | | 10011 | 10117 | 07.400 | 00 (11 | 07.000 | 1/7/5 |
| On-the-Job Training - Oil sector - None | | 48,246 | 42,447 | 37,430 | 32,611 | 27,298 | 16,745 |
| (jobs) | | | | | | . ==== | |
| On-the-Job Training - Oil sector - Over 10 | | 7,740 | 6,934 | 6,229 | 5,530 | 4,722 | 2,949 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Oil sector - Up to 1 | | 558,269 | 498,517 | 446,256 | 394,637 | 335,590 | 208,628 |
| year (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - 1 | | 108,601 | 153,926 | 147,599 | 139,966 | 168,816 | 264,706 |
| to 4 years (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - 4 | | 30,386 | 42,000 | 42,390 | 41,928 | 49,971 | 77,550 |
| to 10 years (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - | | 30,022 | 42,886 | 41,648 | 40,051 | 48,782 | 77,239 |
| None (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - | | 6,771 | 9,591 | 8,900 | 8,163 | 9,762 | 15,163 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - Up | | 355,575 | 510,059 | 483,351 | 454,325 | 552,869 | 874,034 |
| to 1 year (jobs) | | | | | | | |
| On-the-Job Training - Wind sector - 1 to 4 | | 61,790 | 106,235 | 119,093 | 113,557 | 145,537 | 196,411 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Wind sector - 4 to | | 16,225 | 28,087 | 33,731 | 35,078 | 43,954 | 57,999 |
| 10 years (jobs) | | | | | | | |
| On-the-Job Training - Wind sector - None | | 16,781 | 29,012 | 32,766 | 31,544 | 40,650 | 55,122 |
| (jobs) | | | | | - | | - |
| On-the-Job Training - Wind sector - Over | | 3,721 | 6,314 | 6,739 | 5,986 | 7,681 | 10,383 |
| 10 years (jobs) | | -, | | | , | , | |
| On-the-Job Training - Wind sector - Up to | | 207,695 | 357,511 | 394,123 | 367,069 | 475,758 | 648,847 |
| 1 year (jobs) | | | | | | , | |
| Related work experience - All sectors - 1 | | 1,060,057 | 1,218,725 | 1,250,089 | 1,228,283 | 1,448,962 | 1,846,594 |
| to 4 years (jobs) | | 1,000,001 | 1,210,120 | 1,200,007 | 1,220,200 | 1,110,702 | 1,010,071 |
| Related work experience - All sectors - 4 | | 675,711 | 780,852 | 800,254 | 786,233 | 930,754 | 1,190,427 |
| to 10 years (jobs) | | 010,111 | 100,002 | 000,204 | 100,200 | 700,104 | 1,170,421 |
| Related work experience - All sectors - | | 412,411 | 480,978 | 496,642 | 488,883 | 578,837 | 743,989 |
| None (jobs) | | → 1∠, 4 11 | 400,710 | 470,042 | 400,003 | 510,631 | 140,707 |
| Related work experience - All sectors - | | 187,857 | 216,469 | 218,450 | 211,126 | 249,017 | 317,722 |
| Over 10 years (jobs) | | 101,001 | £10,407 | 210,430 | 211,120 | 247,011 | 311,122 |
| Related work experience - All sectors - Up | | E01107 | 407.170 | 705775 | 4000/0 | 015 / 50 | 1,053,820 |
| | | 581,186 | 684,172 | 705,465 | 689,969 | 815,452 | 1,U33,82U |
| to 1 year (jobs) | | | | | | | <u></u> |

Table 80: E-B+ scenario - IMPACTS - Jobs (continued)

| Table 80: E-B+ scenario - IMPACTS - Jobs | • | | | | | | |
|--|------|----------|---------|---------|----------|----------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Related work experience - Biomass sector | | 25,157 | 31,622 | 55,215 | 80,869 | 103,220 | 130,658 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 13,109 | 15,926 | 29,001 | 44,841 | 59,014 | 75,329 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 14,242 | 17,332 | 27,557 | 36,705 | 44,377 | 55,834 |
| - None (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 3,603 | 4,264 | 7,554 | 11,581 | 15,231 | 19,534 |
| - Over 10 years (jobs) | | 22.22/ | 22.722 | (0) | | | |
| Related work experience - Biomass sector | | 28,024 | 33,522 | 50,606 | 64,227 | 75,606 | 95,317 |
| - Up to 1 year (jobs) | | 0.704 | 00.407 | 01.000 | 47,700 | 05.405 | |
| Related work experience - CO2 sector - 1 | | 2,631 | 39,497 | 34,328 | 16,699 | 25,105 | 46,239 |
| to 4 years (jobs) | | 1.000 | 07.170 | 007/0 | 11 / 0 / | 17.017 | |
| Related work experience - CO2 sector - 4 | | 1,820 | 27,472 | 23,749 | 11,436 | 17,216 | 32,042 |
| to 10 years (jobs) | | 1 107 | 17.000 | 1/ 0/ 0 | 7.050 | 10 (00 | 00.001 |
| Related work experience - CO2 sector - | | 1,137 | 17,299 | 14,848 | 7,050 | 10,633 | 20,081 |
| None (jobs) | | / / 0 | ((50 | F 000 | 0.000 | / 000 | 70/0 |
| Related work experience - CO2 sector - | | 448 | 6,652 | 5,838 | 2,892 | 4,338 | 7,842 |
| Over 10 years (jobs) | | 1.000 | 00.010 | 17,000 | 0.051 | 10 (10 | 00 (00 |
| Related work experience - CO2 sector - | | 1,320 | 20,019 | 17,339 | 8,351 | 12,612 | 23,622 |
| Up to 1 year (jobs) | | 07710 | 7.077 | / 177 | 0.701 | 2011 | 0.07.0 |
| Related work experience - Coal sector - 1 | | 26,712 | 7,377 | 4,177 | 3,631 | 3,246 | 2,843 |
| to 4 years (jobs) | | 15 /05 | / 100 | 0.050 | 1 010 | 1//0 | 1//0 |
| Related work experience - Coal sector - 4 | | 15,695 | 4,109 | 2,053 | 1,810 | 1,642 | 1,460 |
| to 10 years (jobs) | | 0.577 | 0.570 | 1.050 | 1100 | 10/0 | 001 |
| Related work experience - Coal sector - | | 9,564 | 2,569 | 1,358 | 1,183 | 1,060 | 931 |
| None (jobs) | | 2.0/0 | 1.07/ | E// | F01 | 1.57 | 409 |
| Related work experience - Coal sector - | | 3,962 | 1,074 | 566 | 501 | 457 | 409 |
| Over 10 years (jobs) | | 1/, /,70 | 4,297 | 0.7/7 | 0.000 | 0.100 | 1,844 |
| Related work experience - Coal sector - | | 14,478 | 4,291 | 2,767 | 2,388 | 2,120 | 1,644 |
| Up to 1 year (jobs) Related work experience - Grid sector - 1 | | 100 0/F | 250 005 | 200 120 | 277.010 | /.00.00/ | /71.000 |
| | | 189,865 | 250,095 | 322,139 | 364,012 | 498,234 | 671,208 |
| to 4 years (jobs) Related work experience - Grid sector - 4 | | 124,425 | 163,776 | 210,799 | 238,022 | 325,544 | 438,233 |
| to 10 years (jobs) | | 124,425 | 103,110 | 210,199 | 230,022 | 325,544 | 430,233 |
| Related work experience - Grid sector - | | 77,987 | 102,885 | 132,719 | 150,185 | 205,848 | 277,682 |
| None (jobs) | | 11,701 | 102,000 | 132,119 | 150,165 | 205,646 | 211,002 |
| Related work experience - Grid sector - | | 32,251 | 42,474 | 54,700 | 61,799 | 84,572 | 113,915 |
| Over 10 years (jobs) | | 32,231 | 42,414 | 34,700 | 01,177 | 04,512 | 113,713 |
| Related work experience - Grid sector - | + | 100,534 | 132,934 | 171,886 | 194,979 | 267,907 | 362,321 |
| Up to 1 year (jobs) | | 100,554 | 132,734 | 171,000 | 174,717 | 201,701 | 302,321 |
| Related work experience - Natural gas | | 202,869 | 152,582 | 113,636 | 97,575 | 77,128 | 57,447 |
| sector - 1 to 4 years (jobs) | | 202,809 | 102,002 | 113,030 | 71,313 | 11,120 | 31,441 |
| Related work experience - Natural gas | | 134,972 | 101,628 | 75,927 | 65,604 | 52,043 | 38,861 |
| sector - 4 to 10 years (jobs) | | 134,712 | 101,020 | 13,721 | 05,004 | 32,043 | 30,001 |
| Related work experience - Natural gas | | 79,594 | 60,206 | 45,249 | 39,353 | 31,361 | 23,517 |
| sector - None (jobs) | | 17,574 | 00,200 | 45,247 | 37,333 | 31,301 | 23,311 |
| Related work experience - Natural gas | | 36,650 | 27,418 | 20,251 | 17,172 | 13,470 | 9,977 |
| sector - Over 10 years (jobs) | | 30,030 | 21,410 | 20,231 | 11,112 | 13,410 | 2,211 |
| Related work experience - Natural gas | | 95,636 | 71,908 | 53,583 | 45,998 | 36,381 | 27,158 |
| sector - Up to 1 year (jobs) | | 75,050 | 11,700 | 33,303 | 43,770 | 30,301 | 21,130 |
| Related work experience - Nuclear sector | | 18,689 | 18,096 | 18,158 | 13,837 | 12,605 | 16,420 |
| - 1 to 4 years (jobs) | | 10,007 | 10,070 | 10,130 | 10,001 | 12,000 | 10,420 |
| Related work experience - Nuclear sector | | 12,125 | 11,737 | 11,775 | 8,971 | 8,171 | 10,642 |
| - 4 to 10 years (jobs) | | 12,120 | 11,101 | 11,110 | 0,711 | 5,111 | 10,042 |
| Related work experience - Nuclear sector | | 6,311 | 6,120 | 6,149 | 4,692 | 4,280 | 5,583 |
| - None (jobs) | | 0,011 | 0,120 | 0,147 | 7,072 | 4,200 | 0,000 |
| Related work experience - Nuclear sector | | 3,732 | 3,616 | 3,630 | 2,767 | 2,522 | 3,287 |
| - Over 10 years (jobs) | | 0,102 | 0,010 | 0,000 | ۷,۱۰۱ | 2,022 | 0,201 |
| Related work experience - Nuclear sector | | 9,215 | 8,931 | 8,969 | 6,841 | 6,238 | 8,133 |
| - Up to 1 year (jobs) | | 7,210 | 5,751 | 0,707 | 0,041 | 0,200 | 5,100 |
| op to i your tjobbj | | | | | | | |

Table 80: E-B+ scenario - IMPACTS - Jobs (continued)

| | (00 | | | | | | |
|---|------|---------|---------|---------|-----------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Related work experience - Oil sector - 1 to | | 302,142 | 269,872 | 241,615 | 213,657 | 181,735 | 112,904 |
| 4 years (jobs) | | | | | | | |
| Related work experience - Oil sector - 4 to | | 183,328 | 163,462 | 146,092 | 128,961 | 109,518 | 67,918 |
| 10 years (jobs) | | | | | | | |
| Related work experience - Oil sector - | | 106,860 | 95,809 | 86,142 | 76,551 | 65,362 | 40,896 |
| None (jobs) | | | | | | | |
| Related work experience - Oil sector - | | 52,719 | 46,922 | 41,873 | 36,913 | 31,344 | 19,408 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Oil sector - Up | | 147,849 | 132,071 | 118,310 | 104,771 | 89,100 | 55,605 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - Solar PV sector | | 184,079 | 263,287 | 252,193 | 239,405 | 291,159 | 460,181 |
| - 1 to 4 years (jobs) | | • | | | , | | , |
| Related work experience - Solar PV sector | | 118,988 | 169,691 | 162,361 | 153,845 | 186,516 | 293,875 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Solar PV sector | | 75,112 | 107,194 | 103,020 | 98,080 | 119,161 | 188,200 |
| - None (jobs) | | | | | | | |
| Related work experience - Solar PV sector | | 33,887 | 48,648 | 45,388 | 42,000 | 50,978 | 80,348 |
| - Over 10 years (jobs) | | - | · | | • | | - |
| Related work experience - Solar PV sector | | 119,290 | 169,643 | 160,927 | 151,104 | 182,387 | 286,090 |
| - Up to 1 year (jobs) | | | | | | | |
| Related work experience - Wind sector - 1 | | 107,913 | 186,297 | 208,628 | 198,598 | 256,530 | 348,695 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - Wind sector - 4 | | 71,249 | 123,049 | 138,497 | 132,743 | 171,090 | 232,069 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 41,605 | 71,565 | 79,599 | 75,084 | 96,755 | 131,265 |
| None (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 20,605 | 35,402 | 38,651 | 35,500 | 46,104 | 63,003 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Wind sector - | | 64,840 | 110,847 | 121,077 | 111,310 | 143,100 | 193,730 |
| Up to 1 year (jobs) | | | | | | | |
| 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) | | 32,837 | 43,866 | 57,324 | 65,745 | 91,371 | 125,035 |
| Wage income - Natural Gas (million \$2019) | | 36,422 | 27,768 | 20,930 | 18,149 | 14,518 | 10,952 |
| Wage income - Nuclear (million \$2019) | | 3,579 | 3,550 | 3,650 | 2,852 | 2,665 | 3,563 |
| Wage income - Oil (million \$2019) | | 52,195 | 47,217 | 42,805 | 38,319 | 33,009 | 20,749 |
| Wage income - Solar (million \$2019) | | 29,439 | 42,538 | 41,384 | 39,918 | 49,188 | 78,830 |
| Wage income - Wind (million \$2019) | | 17,785 | 31,155 | 35,723 | 34,987 | 45,782 | 63,070 |
| 11232 23 11 (1 +2017) | | ,. 50 | 5.,.50 | 55,. 20 | 5 .,, 5 . | .5,.52 | 55,5.0 |

Table 81: REF scenario - PILLAR 1: Efficiency/Electrification - Commercial

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

Table 81: REF scenario - PILLAR 1: Efficiency/Electrification - Commercial (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Sales of water heating units - Other (%) | 1.66 | 1.69 | 1.73 | 1.71 | 1.73 | 1.74 | 1.73 |

Table 82: REF scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

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

Table 83: REF scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| 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 |
| Final energy use - Residential (PJ) | 11,787 | 11,149 | 10,849 | 10,682 | 10,653 | 10,714 | 10,787 |
| Final energy use - Transportation (PJ) | 28,007 | 26,732 | 24,918 | 23,878 | 24,004 | 24,746 | 25,679 |

Table 84: REF scenario - PILLAR 1: Efficiency/Electrification - Residential

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

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|-------|
| 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 |
| Vehicle sales - Light-duty - diesel (%) | 1.4 | 1.84 | 2.16 | 2.01 | 1.81 | 1.68 | 1.6 |
| 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 - 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 - diesel (%) | 65.2 | 63.5 | 61.6 | 59.6 | 58 | 56.5 | 55.2 |
| 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 |

Table 85: REF scenario - PILLAR 1: Efficiency/Electrification - Transportation (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|-------|-------|-------|-------|-------|-------|
| 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 |

Table 86: REF scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---------|---------|---------|---------|---------|---------|---------|
| Capital invested - Biomass power plant | 0 | 0 | 0.002 | 0.002 | 0.002 | 0.002 | 0.014 |
| (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu allam | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| power plant (billion \$2018) | | | | | | | |
| Capital invested - Biomass w/ccu power | 0 | 0 | 0.187 | 0.051 | 0.04 | 0.043 | 0.037 |
| plant (billion \$2018) | | | | | | | |
| 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 - 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 - Coal (MW) | 215,803 | 136,252 | 87,021 | 67,927 | 65,539 | 63,529 | 58,003 |
| Installed - Ct (MW) | 147,318 | 141,836 | 138,659 | 133,493 | 148,035 | 248,004 | 303,871 |
| Installed - Geothermal (MW) | 2,394 | 2,396 | 2,400 | 2,405 | 2,409 | 2,415 | 2,421 |
| Installed - Grid battery storage (MW) | | 1,001 | 1,423 | 2,713 | 3,240 | 4,835 | 5,590 |
| Installed - Hydro (MW) | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 | 78,608 |
| Installed - Nuclear (MW) | 98,458 | 95,132 | 90,001 | 76,069 | 68,465 | 56,021 | 48,338 |
| Installed - Offshore wind (MW) | 29.3 | 997 | 2,991 | 5,028 | 7,082 | 9,651 | 38,635 |
| Installed - Onshore wind (MW) | 97,749 | 99,521 | 121,386 | 144,651 | 220,515 | 277,590 | 307,422 |
| Installed - Other (MW) | 67,926 | 57,451 | 55,131 | 53,826 | 51,918 | 50,896 | 49,542 |
| Installed - Pumped hydro storage (MW) | | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 | 19,418 |
| 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 |

Table 87: REF scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Biomass (TWh) | 16.8 | 20.1 | 14 | 8.93 | 3.82 | 4.42 | 5.62 |
| Biomass power plant (GWh) | 3,585 | 4,154 | 1,171 | 1,248 | 847 | 681 | 301 |
| Biomass w cc (TWh) | 0 | 0 | 0.088 | 0.099 | 0.108 | 0.12 | 0.13 |
| Biomass w/ccu allam power plant (GWh) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomass w/ccu power plant (GWh) | 0 | 0 | 88.1 | 99 | 108 | 120 | 130 |
| Coal (TWh) | 965 | 844 | 534 | 394 | 366 | 342 | 310 |
| 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 |
| Geothermal (TWh) | 14.6 | 14.5 | 14.6 | 14.6 | 14.2 | 14.2 | 13.9 |
| Hydro (TWh) | 300 | 312 | 295 | 296 | 304 | 294 | 295 |
| Nuclear (TWh) | 802 | 775 | 733 | 620 | 558 | 456 | 394 |
| Offshore wind (TWh) | 0.096 | 3.67 | 11.1 | 23.4 | 28.7 | 38.7 | 173 |
| Onshore wind (TWh) | 411 | 413 | 510 | 613 | 942 | 1,177 | 1,300 |
| 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 |

Table 88: REF scenario - PILLAR 3: Clean fuels - Bioenergy

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|--------|--------|--------|-------|-------|--------|
| Biomass input - BECCS-H2 (1000 tonnes) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biomass input - Bio-FT w/ CC (1000 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| tonnes) | | | | | | | |
| Biomass input - Bio-SNG w/ CC (1000 | 0 | 0 | 5.9 | 6.22 | 5.52 | 5.33 | 5.34 |
| tonnes) | | | | | | | |
| 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 | 0 | 0 | 53.2 | 59.8 | 65.2 | 72.5 | 78.2 |
| tonnes) | | | | | | | |

Table 88: REF scenario - PILLAR 3: Clean fuels - Bioenergy (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|---------|---------|---------|---------|---------|---------|---------|
| Biomass input - Ethanol (1000 tonnes) | 129,536 | 129,536 | 129,529 | 129,529 | 129,536 | 129,536 | 129,536 |
| Biomass input - FT diesel (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 |

Table 89: REF scenario - PILLAR 4: CCUS - CO2 storage

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|-------------------|------|------|------|------|------|------|------|
| CO2 storage (MMT) | 0 | 0 | 0.18 | 0.23 | 0.25 | 0.28 | 0.29 |

Table 90: REF scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-----------|
| Carbon sink potential - High - Accelerate | | | | | | | -48,900 |
| regeneration (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - All (not | | | | | | | _ |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1,535,900 |
| Carbon sink potential - High - Avoid | | | | | | | -84,000 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Extend | | | | | | | -302,000 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Improve | | | | | | | -57,000 |
| plantations (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | - |
| retention of HWP (1000 tCO2e/y) | | | | | | | 300,000 |
| Carbon sink potential - High - Increase | | | | | | | -60,000 |
| trees outside forests (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -242,000 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | - |
| pasture (1000 tCO2e/y) | | | | | | | 264,000 |
| Carbon sink potential - High - Restore | | | | | | | -178,000 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Accelerate | | | | | | | -24,500 |
| regeneration (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Low - All (not | | | | | | | - |
| counting overlap) (1000 tCO2e/y) | | | | | | | 505,500 |
| Carbon sink potential - Low - Avoid | | | | | | | -14,000 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Extend | | | | | | | -116,000 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Improve | | | | | | | -29,000 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -100,000 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -21,000 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -121,000 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -20,000 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Restore | | | | | | | -60,000 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Accelerate | | | | | | | -36,700 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - All (not | | | | | | | - |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1,020,200 |

Table 90: REF scenario - PILLAR 6: Land sinks - Forests (continued)

| Item Caphan sink potential, Mid. Avoid | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 -49,000 |
|--|------|------|------|------|------|------|-----------------|
| Carbon sink potential - Mid - Avoid | | | | | | | -49,000 |
| deforestation (1000 tC02e/y) | | | | | | | 000.000 |
| Carbon sink potential - Mid - Extend | | | | | | | -209,000 |
| rotation length (1000 tC02e/y) | | | | | | | /0.500 |
| Carbon sink potential - Mid - Improve | | | | | | | -42,500 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | - |
| retention of HWP (1000 tCO2e/y) | | | | | | | 200,000 |
| Carbon sink potential - Mid - Increase | | | | | | | -40,500 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -181,500 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -142,000 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Restore | | | | | | | -119,000 |
| productivity (1000 tCO2e/y) | | | | | | | • |
| Land impacted for carbon sink potential - | | | | | | | 8,000 |
| High - Accelerate regeneration (1000 | | | | | | | 3,000 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 11,373 |
| High - Avoid deforestation (over 30 years) | | | | | | | 11,515 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 154,000 |
| | | | | | | | 154,000 |
| High - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | 01 000 |
| Land impacted for carbon sink potential - | | | | | | | 21,000 |
| High - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| High - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 5,700 |
| High - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 16,000 |
| High - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 7,500 |
| High - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 59,000 |
| High - Restore productivity (1000 | | | | | | | • |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 282,573 |
| High - Total impacted (over 30 years) | | | | | | | - , |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 4,000 |
| Low - Accelerate regeneration (1000 | | | | | | | 4,000 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 10,677 |
| Low - Avoid deforestation (over 30 years) | | | | | | | 10,011 |
| (1000 hectares) | | | | | | | |
| | | | | | | | F0 000 |
| Land impacted for carbon sink potential - | | | | | | | 59,000 |
| Low - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | 10.500 |
| Land impacted for carbon sink potential - | | | | | | | 10,500 |
| Low - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| Low - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |

Table 90: REF scenario - PILLAR 6: Land sinks - Forests (continued)

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

Table 91: 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 92: REF 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 93: REF scenario - IMPACTS - Fossil fuel industries

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|--------|
| Natural gas consumption - Annual (tcf) | | 23,809 | 26,243 | 27,450 | 25,560 | 25,988 | 25,610 |

Table 93: REF scenario - IMPACTS - Fossil fuel industries (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|-----------|
| Natural gas consumption - Cumulative | | | | | | | 792,006 |
| (tcf) | | | | | | | |
| 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 |
| Oil consumption - Annual (million bbls) | | 6,043 | 5,699 | 5,491 | 5,512 | 5,642 | 5,820 |
| Oil consumption - Cumulative (million | | | | | | | 178,024 |
| bbls) | | | | | | | |
| Oil production - Annual (million bbls) | | 5,198 | 5,216 | 5,209 | 5,074 | 4,957 | 4,365 |
| Oil production - Cumulative (million bbls) | | | | | | | 155,778 |

Table 94: REF scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|---------|---------|---------|---------|---------|---------|
| Monetary damages from air pollution - | | 71,041 | 43,563 | 34,738 | 31,383 | 29,937 | 28,118 |
| Coal (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 11,837 | 11,639 | 13,941 | 13,774 | 13,915 | 13,437 |
| Natural Gas (million 2019\$) | | | | | | | |
| Monetary damages from air pollution - | | 104,043 | 108,301 | 112,532 | 117,351 | 122,191 | 127,101 |
| Transportation (million 2019\$) | | | | | | | |
| Premature deaths from air pollution - | | 8,024 | 4,920 | 3,923 | 3,545 | 3,381 | 3,176 |
| Coal (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1,336 | 1,314 | 1,574 | 1,555 | 1,571 | 1,517 |
| Natural Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 11,702 | 12,181 | 12,657 | 13,199 | 13,743 | 14,295 |
| Transportation (deaths) | | | | | | | |

Table 95: REF scenario - IMPACTS - Jobs

| 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------|---------|---|---|--|---|--|
| | | | | | | 30,778 |
| | | - | - | | | 654,706 |
| | | | | · · | | 428,603 |
| | 00.,0.0 | 000,0.0 | .2.,.00 | ,,0 | 000,00. | .20,000 |
| | 481,485 | 400,603 | 333,553 | 269,133 | 224,097 | 177,285 |
| | 34,546 | 35,104 | 44,813 | 53,531 | 60,257 | 95,104 |
| | 46,537 | 48,395 | 49,114 | 46,834 | 47,106 | 45,678 |
| | 271,996 | 263,680 | 280,141 | 302,074 | 314,668 | 358,272 |
| | 277,149 | 253,538 | 251,171 | 253,853 | 255,559 | 283,423 |
| | 424,258 | 422,267 | 473,464 | 510,552 | 530,968 | 547,052 |
| | 691,975 | 675,530 | 721,855 | 745,571 | 741,637 | 816,287 |
| | | | | | | |
| | 532,142 | 507,651 | 521,097 | 522,808 | 511,244 | 544,237 |
| | | | | | | |
| | 18,196 | 17,228 | 17,499 | 17,734 | 17,716 | 19,186 |
| | | | | | | |
| | 972,467 | 944,804 | 1,001,726 | 1,024,854 | 1,013,719 | 1,108,871 |
| | | | | | | |
| | 127,793 | 121,496 | 124,406 | 125,391 | 123,794 | 132,320 |
| | | | | | | |
| | 15,721 | 15,116 | 14,471 | 13,823 | 13,632 | 13,402 |
| | | | | | | |
| | 14,337 | 13,667 | 12,869 | 12,186 | 12,012 | 11,712 |
| | | | | | | |
| | 698 | 670 | 631 | 598 | 598 | 587 |
| | | | | | | |
| | 47,731 | 46,172 | 44,960 | 43,255 | 42,721 | 42,422 |
| | | | | | | |
| | 3,946 | 3,803 | 3,617 | 3,454 | 3,441 | 3,386 |
| | | | | | | |
| | | 0.287 | 0.366 | 0.393 | 0.435 | 0.463 |
| | | | | | | |
| | 2020 | 31,901 442,887 331,815 481,485 34,546 46,537 271,996 277,149 424,258 691,975 | 31,901 31,368 442,887 446,175 331,815 365,578 481,485 400,603 34,546 35,104 46,537 48,395 271,996 263,680 277,149 253,538 424,258 422,267 691,975 675,530 532,142 507,651 18,196 17,228 972,467 944,804 127,793 121,496 15,721 15,116 14,337 13,667 698 670 47,731 46,172 | 31,901 31,368 31,313 442,887 446,175 501,228 331,815 365,578 421,785 481,485 400,603 333,553 34,546 35,104 44,813 46,537 48,395 49,114 271,996 263,680 280,141 277,149 253,538 251,171 424,258 422,267 473,464 691,975 675,530 721,855 532,142 507,651 521,097 18,196 17,228 17,499 972,467 944,804 1,001,726 127,793 121,496 124,406 15,721 15,116 14,471 14,337 13,667 12,869 698 670 631 47,731 46,172 44,960 3,946 3,803 3,617 | 31,901 31,368 31,313 30,472 442,887 446,175 501,228 540,788 331,815 365,578 421,785 429,120 481,485 400,603 333,553 269,133 34,546 35,104 44,813 53,531 46,537 48,395 49,114 46,834 271,996 263,680 280,141 302,074 277,149 253,538 251,171 253,853 424,258 422,267 473,464 510,552 691,975 675,530 721,855 745,571 532,142 507,651 521,097 522,808 18,196 17,228 17,499 17,734 972,467 944,804 1,001,726 1,024,854 127,793 121,496 124,406 125,391 15,721 15,116 14,471 13,823 14,337 13,667 12,869 12,186 698 670 631 598 47,731 46,172 | 31,901 31,368 31,313 30,472 30,467 442,887 446,175 501,228 540,788 564,183 331,815 365,578 421,785 429,120 380,807 481,485 400,603 333,553 269,133 224,097 34,546 35,104 44,813 53,531 60,257 46,537 48,395 49,114 46,834 47,106 271,996 263,680 280,141 302,074 314,668 277,149 253,538 251,171 253,853 255,559 424,258 422,267 473,464 510,552 530,968 691,975 675,530 721,855 745,571 741,637 532,142 507,651 521,097 522,808 511,244 18,196 17,228 17,499 17,734 17,716 972,467 944,804 1,001,726 1,024,854 1,013,719 127,793 121,496 124,406 125,391 123,794 15,721 < |

Table 95: REF scenario - IMPACTS - Jobs (continued)

| Table 95: REF scenario - IMPACTS - Jobs (co | | 0005 | 0000 | 2035 | 00/0 | 00/5 | 0050 |
|---|------|----------|---------------|---------|---------------|---------------|---------------|
| Item By education level - CO2 sector - | 2020 | 2025 | 2030 0.287 | | 2040 0.393 | 2045 0.435 | 2050 0.464 |
| Bachelors degree (jobs) | | | 0.267 | 0.365 | 0.393 | 0.435 | 0.464 |
| By education level - CO2 sector - Doctoral | | | 0.012 | 0.015 | 0.016 | 0.018 | 0.019 |
| degree (jobs) | | | 0.012 | 0.013 | 0.016 | 0.016 | 0.019 |
| By education level - CO2 sector - High | | | 0.368 | 0.468 | 0.503 | 0.555 | 0.591 |
| school diploma or less (jobs) | | | 0.000 | 0.400 | 0.000 | 0.000 | 0.071 |
| By education level - CO2 sector - Masters | | | 0.074 | 0.094 | 0.101 | 0.112 | 0.119 |
| or professional degree (jobs) | | | 0.014 | 0.074 | 0.101 | 0.112 | 0.117 |
| By education level - Coal sector - | | 34,993 | 21,604 | 15,196 | 12,828 | 11,588 | 10,214 |
| Associates degree or some college (jobs) | | 04,770 | 21,004 | 10,170 | 12,020 | 11,000 | 10,214 |
| By education level - Coal sector - | | 22,698 | 14,077 | 9,948 | 8,484 | 7,744 | 6,882 |
| Bachelors degree (jobs) | | 22,070 | 14,011 | 7,740 | 0,404 | 1,1-7-7 | 0,002 |
| By education level - Coal sector - Doctoral | | 760 | 478 | 338 | 289 | 268 | 242 |
| degree (jobs) | | 100 | 710 | 000 | 207 | 200 | 2-72 |
| By education level - Coal sector - High | | 53,521 | 32,643 | 22,951 | 19,159 | 16,860 | 14,468 |
| school diploma or less (jobs) | | 00,021 | 02,040 | 22,701 | 17,107 | 10,000 | 14,400 |
| By education level - Coal sector - Masters | | 5,292 | 3,300 | 2,326 | 1,983 | 1,825 | 1,635 |
| or professional degree (jobs) | | 0,272 | 0,000 | 2,020 | 1,700 | 1,020 | 1,000 |
| By education level - Grid sector - | | 143,570 | 150,908 | 186,088 | 208,415 | 220,469 | 243,651 |
| Associates degree or some college (jobs) | | 143,310 | 130,700 | 100,000 | 200,413 | 220,409 | 243,031 |
| By education level - Grid sector - | | 82,274 | 85,914 | 105,262 | 117,146 | 123,149 | 135,264 |
| Bachelors degree (jobs) | | 02,214 | 65,714 | 103,202 | 111,140 | 123,147 | 133,204 |
| By education level - Grid sector - Doctoral | | 2,372 | 2,435 | 2,933 | 3,210 | 3,317 | 3,582 |
| degree (jobs) | | 2,312 | 2,435 | 2,933 | 3,210 | 3,311 | 3,362 |
| By education level - Grid sector - High | | 183,588 | 193,946 | 240,360 | 270,545 | 287,619 | 319,440 |
| • | | 103,300 | 173,740 | 240,360 | 210,545 | 201,019 | 319,440 |
| school diploma or less (jobs) By education level - Grid sector - Masters | | 00.700 | 01 551 | 07.000 | 00.007 | 20 (11 | 00 500 |
| • | | 20,702 | 21,551 | 26,323 | 29,206 | 30,611 | 33,523 |
| or professional degree (jobs) | | 100 107 | 101 / 01 | 100.007 | 100 500 | 170.000 | 1/7/7/ |
| By education level - Natural gas sector - | | 183,106 | 181,431 | 182,804 | 180,503 | 179,358 | 167,676 |
| Associates degree or some college (jobs) | | 107.570 | 100.007 | 101 511 | 117 / 00 | 110 101 | 100.000 |
| By education level - Natural gas sector - | | 127,562 | 123,827 | 121,511 | 116,438 | 113,191 | 103,983 |
| Bachelors degree (jobs) | | / 000 | / 055 | 0.007 | 0.707 | 0.570 | 0.007 |
| By education level - Natural gas sector - | | 4,238 | 4,055 | 3,927 | 3,724 | 3,570 | 3,234 |
| Doctoral degree (jobs) | | 007.110 | 000.007 | 007.570 | 010 5 / 0 | 017.000 | 007.720 |
| By education level - Natural gas sector - | | 224,113 | 223,226 | 224,560 | 219,540 | 217,980 | 204,472 |
| High school diploma or less (jobs) | | 01.07.0 | 00.007 | 00.051 | 00.07 | 07100 | 0/ 7// |
| By education level - Natural gas sector - | | 31,242 | 30,086 | 29,351 | 28,067 | 27,139 | 24,764 |
| Masters or professional degree (jobs) | | 40.747 | 40.005 | 10.500 | 40.070 | | |
| By education level - Nuclear sector - | | 13,714 | 13,235 | 12,589 | 10,073 | 9,844 | 6,917 |
| Associates degree or some college (jobs) | | 1, 00, | 4/ 070 | 40.577 | 10.011 | 40.570 | 7.000 |
| By education level - Nuclear sector - | | 14,824 | 14,272 | 13,544 | 10,811 | 10,542 | 7,390 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 650 | 622 | 586 | 465 | 451 | 314 |
| Doctoral degree (jobs) | | | | | | | |
| By education level - Nuclear sector - High | | 17,023 | 16,472 | 15,710 | 12,602 | 12,347 | 8,697 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Nuclear sector - | | 4,013 | 3,856 | 3,653 | 2,911 | 2,834 | 1,984 |
| Masters or professional degree (jobs) | | | | | | | |
| By education level - Oil sector - Associates | | 206,894 | 186,432 | 169,741 | 154,947 | 143,556 | 125,658 |
| degree or some college (jobs) | | | | | | | |
| By education level - Oil sector - Bachelors | | 213,345 | 189,156 | 169,188 | 151,377 | 137,271 | 117,201 |
| degree (jobs) | | | | | | | |
| By education level - Oil sector - Doctoral | | 6,891 | 6,141 | 5,520 | 4,959 | 4,515 | 3,865 |
| degree (jobs) | | | | | | | |
| By education level - Oil sector - High | | 319,890 | 290,042 | 265,879 | 244,649 | 228,550 | 202,090 |
| school diploma or less (jobs) | | | | | | | |
| By education level - Oil sector - Masters or | | 48,374 | 42,677 | 37,962 | 33,746 | 30,392 | 25,735 |
| professional degree (jobs) | | , . | | | | , | , |
| | | 65,241 | 62,569 | 83,946 | 88,241 | 92,303 | 168,703 |
| By education level - Solar PV sector - | - 1 | 65.74I I | 02.007 | 00.740 | 00.741 | 7210 | [[[[]]]]] |

Table 95: REF scenario - IMPACTS - Jobs (continued)

| Backelors degree (jobs) By education level - Solar PV sector - 1,480 1,436 1,912 2,138 2,339 | 2050 102,163 4,314 223,347 25,287 80,065 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 56,907 |
|--|---|
| Bachelors degree (jobs) By education level - Solar PV sector - Doctoral degree (jobs) Sy education level - Solar PV sector - High school diploma or less (jobs) Sy education level - Solar PV sector - High school diploma or less (jobs) Sy education level - Solar PV sector - Rafe Sy education level - Solar PV sector - Rafe Sy education level - Solar PV sector - Rafe Sy education level - Solar PV sector - Rafe Sy education level - Solar PV sector - Rafe Sy education level - Wind sector - Sasociates degree or some college (jobs) Sy education level - Wind sector - Sasociates degree or some college (jobs) Sy education level - Wind sector - Sasociates degree (jobs) Sy education level - Wind sector - Sasociates degree (jobs) Sy education level - Wind sector - Sasociates Sy education level - Wind sector - High school diploma or less (jobs) Sy education level - Wind sector - High school diploma or less (jobs) Sy education level - Wind sector - High school diploma or less (jobs) Sy essurce sector - Solar (jobs) Sy resource sector - Solar (jobs) Sy resource sector - Co2 (jobs) Sy resource sector - Co2 (jobs) Sy resource sector - Co2 (jobs) Sy resource sector - Co3 (jobs) Sy resource sector - Co3 (jobs) Sy resource sector - Natural Gas (jobs) Sy resource sector - Natural Gas (jobs) Sy resource sector - Nuclear (jobs) Sy resource sector - Nuclear (jobs) Sy resource sector - Solar (jobs) Sy resource sec | 4,314 223,347 25,287 80,065 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By education level - Solar PV sector - 1,480 1,436 1,912 2,138 2,339 Doctoral degree (jobs) By education level - Solar PV sector - High 91,471 86,780 115,285 119,640 123,522 2 school diploma or less (jobs) By education level - Solar PV sector - 8,682 8,500 11,555 12,603 13,605 Masters or professional degree (jobs) By education level - Wind sector - 28,737 44,236 57,021 76,741 70,886 8 | 223,347 25,287 80,065 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| Doctoral degree (jobs) By education level - Solar PV sector - High school diploma or less (jobs) By education level - Solar PV sector - By education level - Wind sector - 28,737 | 223,347 25,287 80,065 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By education level - Solar PV sector - High school diploma or less (jobs) Sy education level - Solar PV sector - Masters or professional degree (jobs) Sy education level - Wind sector - Solar PV sector - Solar PV sector - Solar | 25,287 80,065 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| School diploma or less (jobs) By education level - Solar PV sector - Masters or professional degree (jobs) Sy education level - Wind sector - Associates degree or some college (jobs) Sy education level - Wind sector - Associates degree or some college (jobs) Sy education level - Wind sector - Bachelors degree (jobs) Sy education level - Wind sector - Doctoral degree (jobs) Sy education level - Wind sector - Doctoral degree (jobs) Sy education level - Wind sector - High school diploma or less (jobs) Sy education level - Wind sector - High school diploma or less (jobs) Sy education level - Wind sector - Masters or professional degree (jobs) Sy education level - Wind sector - Masters or professional degree (jobs) Sy esource sector - Biomass (jobs) Sy resource sector - Biomass (jobs) Sy resource sector - CO2 (jobs) Sy resource sector - CO2 (jobs) Sy resource sector - CO3 (jobs) Sy resource sector - CO3 (jobs) Sy resource sector - Grid (jobs) Sy resource sector - Natural Gas (jobs) Sy resource sector - Natural Gas (jobs) Sy resource sector - Natural Gas (jobs) Sy resource sector - Nuclear (jobs) Sy resource sector - Nuclear (jobs) Sy resource sector - Solar | 25,287 80,065 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By education level - Solar PV sector | 80,065 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| Masters or professional degree (jobs) By education level - Wind sector - Associates degree or some college (jobs) 28,737 44,236 57,021 76,741 70,886 8 Associates degree or some college (jobs) By education level - Wind sector - 20,238 30,772 39,656 54,239 52,183 By education level - Wind sector - Doctoral degree (jobs) By education level - Wind sector - High school diploma or less (jobs) 35,130 55,523 72,021 95,464 84,120 By education level - Wind sector - Masters or professional degree (jobs) 5,543 7,722 9,618 13,420 13,946 By resource sector - Biomass (jobs) 82,434 79,427 76,547 73,317 72,403 By resource sector - Co2 (jobs) 117,264 72,102 50,758 42,743 38,286 By resource sector - Co3 (jobs) 117,264 72,102 50,758 42,743 38,286 By resource sector - Ratural Gas (jobs) 550,266 454,755 560,766 628,522 665,166 78 By resource sector - Nuclear (jobs) 570,260 562,626 562,154 548,271 541,238 | 80,065 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By education level - Wind sector - Associates degree or some college (jobs) 20,238 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 54,239 52,183 30,772 39,656 32,352 2,658 30,100 30,130 30,130 30,130 30,130 30,130 30,130 30,946 30,94 | 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| Associates degree or some college (jobs) By education level - Wind sector - Bachelors degree (jobs) By education level - Wind sector - Doctoral degree (jobs) By education level - Wind sector - Doctoral degree (jobs) By education level - Wind sector - High school diploma or less (jobs) By education level - Wind sector - High school diploma or less (jobs) By education level - Wind sector - Masters or professional degree (jobs) By resource sector - Biomass (jobs) By resource sector - Goz (jobs) By resource sector - Coal (jobs) By resource sector - Coal (jobs) By resource sector - Grid (jobs) By resource sector - Grid (jobs) By resource sector - Natural Gas (jobs) By resource sector - Nuclear (jobs) By resource sector - Nuclear (jobs) By resource sector - Solar (jobs) By resource sector - Wind (jobs) By resource sector - Wind (jobs) By resource sector - Solar (jobs) By resource sec | 59,640 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By education level - Wind sector - Bachelors degree (jobs) By education level - Wind sector - Doctoral degree (jobs) By education level - Wind sector - High school diploma or less (jobs) By education level - Wind sector - High school diploma or less (jobs) By education level - Wind sector - Masters or professional degree (jobs) By resource sector - Biomass (jobs) By resource sector - Biomass (jobs) By resource sector - CO2 (jobs) By resource sector - CO2 (jobs) By resource sector - CO2 (jobs) By resource sector - Goal (jobs) By resource sector - Goal (jobs) By resource sector - Natural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Nuclear (jobs) Solution Sol | 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| Bachelors degree (jobs) By education level - Wind sector - Doctoral degree (jobs) By education level - Wind sector - High school diploma or less (jobs) By education level - Wind sector - Masters or professional degree (jobs) By esource sector - Biomass (jobs) By resource sector - Biomass (jobs) By resource sector - CO2 (jobs) By resource sector - CO2 (jobs) By resource sector - CO3 (jobs) By resource sector - Grid (jobs) By resource sector - Natural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Nuclear (jobs) By resource sector - Oil (jobs) By resource sector - Oil (jobs) By resource sector - Oil (jobs) By resource sector - Nuclear (jobs) By resource sector - Nuclear (jobs) By resource sector - Oil | 3,048 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By education level - Wind sector - Doctoral degree (jobs) By education level - Wind sector - High school diploma or less (jobs) By education level - Wind sector - Masters or professional degree (jobs) By resource sector - Biomass (jobs) By resource sector - Biomass (jobs) By resource sector - CO2 (jobs) 1.03 1.31 1.41 1.55 By resource sector - CO2 (jobs) 117,264 72,102 50,758 42,743 38,286 By resource sector - Grid (jobs) 432,506 454,755 560,966 628,522 665,166 78 79,5394 714,448 648,289 589,677 544,285 48 49 549,677 544,285 49 549,678 549, | 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| Doctoral degree (jobs) By education level - Wind sector - High school diploma or less (jobs) Specific equation level - Wind sector - Masters or professional degree (jobs) By resource sector - Biomass (jobs) Specific equation level - CO2 (jobs) Specific equation level - Wind sector - Masters or professional degree (jobs) Specific equation level - Wind sector - Masters or professional degree (jobs) Specific equation level - Wind sector - Masters or professional degree (jobs) Specific equation level - Wind sector - Biomass (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - CO2 (jobs) Specific equation level - Wind sector - Specific equation level - Wind sector - Specific equation level - Wind sector - Specific equation level - Specific equation level - Wind sector - Specific equation level - Specific equ | 93,934 16,005 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By education level - Wind sector - High school diploma or less (jobs) By education level - Wind sector - Masters or professional degree (jobs) By resource sector - Biomass (jobs) By resource sector - Co2 (jobs) By resource sector - Co3 (jobs) By resource sector - Co3 (jobs) By resource sector - Grid (jobs) By resource sector - Ratural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Old (jobs) By resource sector - Natural Gas (jobs) By resource sector - Solar (jobs) By resource sector - Solar (jobs) By resource sector - Solar (jobs) By resource sector - Wind (jobs) By resource sector - Wind (jobs) Median wages - Annual - Biomass (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) | 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| School diploma or less (jobs) By education level - Wind sector - Masters or professional degree (jobs) By resource sector - Biomass (jobs) 82,434 79,427 76,547 73,317 72,403 By resource sector - CO2 (jobs) 1.03 1.31 1.41 1.55 By resource sector - CO2 (jobs) 117,264 72,102 50,758 42,743 38,286 By resource sector - Grid (jobs) 432,506 454,755 560,966 628,522 665,166 78 78 79 79 79 79 79 79 | 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By education level - Wind sector - Masters or professional degree (jobs) By resource sector - Biomass (jobs) By resource sector - CO2 (jobs) By resource sector - CO2 (jobs) By resource sector - CO2 (jobs) By resource sector - Coal (jobs) By resource sector - Grid (jobs) By resource sector - Grid (jobs) By resource sector - Spid (jobs) By resource sector - Natural Gas (jobs) By resource sector - Nuclear (jobs) By resource sector - Oil (jobs) By resource sector - Solar (jobs) By resource sector - Solar (jobs) By resource sector - Wind (jobs) By resource sector - Solar (jobs) By resource sector - Wind (jobs) By resource sector - Solar (jobs) By resource sector - Wind (jobs) By resource sector - Solar (jobs) By resource sector | 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| or professional degree (jobs) By resource sector - Biomass (jobs) By resource sector - CO2 (jobs) By resource sector - CO2 (jobs) By resource sector - Coal (jobs) By resource sector - Coal (jobs) By resource sector - Coal (jobs) By resource sector - Grid (jobs) By resource sector - Grid (jobs) By resource sector - Natural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Nuclear (jobs) By resource sector - Nuclear (jobs) By resource sector - Oil (jobs) By resource sector - Oil (jobs) By resource sector - Oil (jobs) By resource sector - Solar (jobs) By resource sector - Solar (jobs) By resource sector - Wind (jobs) By resource sector - Solar (jobs) By resour | 71,509 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By resource sector - Biomass (jobs) By resource sector - CO2 (jobs) By resource sector - CO2 (jobs) By resource sector - CO2 (jobs) By resource sector - Coal (jobs) By resource sector - Coal (jobs) By resource sector - Grid (jobs) By resource sector - Grid (jobs) By resource sector - Natural Gas (jobs) By resource sector - Natural Gas (jobs) By resource sector - Nuclear (jobs) By resource sector - Nuclear (jobs) By resource sector - Oil (jobs) By resource sector - Solar (jobs) By resource sector - Solar (jobs) By resource sector - Wind (jobs) By resource sector - Solar (jobs) By resource sector - Vinde (jobs) | 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By resource sector - CO2 (jobs) 1.03 1.31 1.41 1.55 | 1.66 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By resource sector - Coal (jobs) 117,264 72,102 50,758 42,743 38,286 By resource sector - Grid (jobs) 432,506 454,755 560,966 628,522 665,166 7 By resource sector - Natural Gas (jobs) 570,260 562,626 562,154 548,271 541,238 5 By resource sector - Nuclear (jobs) 50,224 48,457 46,083 36,862 36,018 36,018 36,018 36,018 36,862 36,018 36, | 33,441 735,461 504,129 25,302 474,550 523,815 252,692 |
| By resource sector - Grid (jobs) 432,506 454,755 560,966 628,522 665,166 7 By resource sector - Natural Gas (jobs) 570,260 562,626 562,154 548,271 541,238 5 By resource sector - Nuclear (jobs) 50,224 48,457 46,083 36,862 36,018 37,018 36,018 37,018 37,018 36,018 36,018 36,018 37,018 37,018 37,018 37,018 37,018 37,018 37,018 37,018 37,018 37,018 3 | 735,461 504,129 25,302 474,550 523,815 252,692 |
| By resource sector - Natural Gas (jobs) 570,260 562,626 562,154 548,271 541,238 5 By resource sector - Nuclear (jobs) 50,224 48,457 46,083 36,862 36,018 By resource sector - Oil (jobs) 795,394 714,448 648,289 589,677 544,285 47 By resource sector - Solar (jobs) 203,737 195,250 261,817 274,748 286,921 5 By resource sector - Wind (jobs) 90,755 139,643 179,967 242,216 223,793 2 Median wages - Annual - Biomass (\$2019 per job) Median wages - Annual - CO2 (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) | 504,129 25,302 474,550 523,815 252,692 |
| By resource sector - Nuclear (jobs) 50,224 48,457 46,083 36,862 36,018 By resource sector - Oil (jobs) 795,394 714,448 648,289 589,677 544,285 4 By resource sector - Solar (jobs) 203,737 195,250 261,817 274,748 286,921 5 By resource sector - Wind (jobs) 90,755 139,643 179,967 242,216 223,793 2 Median wages - Annual - Biomass (\$2019 per job) Median wages - Annual - CO2 (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) | 25,302 474,550 523,815 252,692 |
| By resource sector - Oil (jobs) 795,394 714,448 648,289 589,677 544,285 4 By resource sector - Solar (jobs) 203,737 195,250 261,817 274,748 286,921 5 By resource sector - Wind (jobs) 90,755 139,643 179,967 242,216 223,793 2 Median wages - Annual - Biomass (\$2019 per job) 51,794 52,681 53,506 54,475 55,717 Median wages - Annual - CO2 (\$2019 per job) 72,624 74,331 76,115 77,980 Median wages - Annual - Coal (\$2019 per job) 59,050 59,933 60,616 61,537 62,818 Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 | 474,550 523,815 252,692 |
| By resource sector - Solar (jobs) 203,737 195,250 261,817 274,748 286,921 5 By resource sector - Wind (jobs) 90,755 139,643 179,967 242,216 223,793 2 Median wages - Annual - Biomass (\$2019 51,794 52,681 53,506 54,475 55,717 per job) Median wages - Annual - CO2 (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) | 523,815 252,692 |
| By resource sector - Wind (jobs) 90,755 139,643 179,967 242,216 223,793 2 Median wages - Annual - Biomass (\$2019 per job) 51,794 52,681 53,506 54,475 55,717 Median wages - Annual - CO2 (\$2019 per job) 72,624 74,331 76,115 77,980 job Median wages - Annual - Coal (\$2019 per job) 59,050 59,933 60,616 61,537 62,818 job Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 job) | 252,692 |
| Median wages - Annual - Biomass (\$2019 per job) 51,794 52,681 53,506 54,475 55,717 Median wages - Annual - CO2 (\$2019 per job) 72,624 74,331 76,115 77,980 Median wages - Annual - Coal (\$2019 per job) 59,050 59,933 60,616 61,537 62,818 Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 job) | |
| per job) Median wages - Annual - CO2 (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Coal (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) Median wages - Annual - Grid (\$2019 per job) | 56,907 |
| Median wages - Annual - CO2 (\$2019 per job) 72,624 74,331 76,115 77,980 Median wages - Annual - Coal (\$2019 per job) 59,050 59,933 60,616 61,537 62,818 Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 | 33,701 |
| job) Median wages - Annual - Coal (\$2019 per job) 59,050 59,933 60,616 61,537 62,818 job) Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 | |
| Median wages - Annual - Coal (\$2019 per job) 59,050 59,933 60,616 61,537 62,818 Median wages - Annual - Grid (\$2019 per job) 62,539 63,375 64,248 65,159 66,110 | 79,929 |
| job) Median wages - Annual - Grid (\$2019 per 62,539 63,375 64,248 65,159 66,110 job) | |
| Median wages - Annual - Grid (\$2019 per 62,539 63,375 64,248 65,159 66,110 job) | 64,176 |
| job) | |
| | 67,102 |
| Median wages - Annual - Natural Gas 66 256 67137 67918 68 605 69 423 | |
| | 70,327 |
| (\$2019 per job) | |
| | 80,864 |
| per job) | |
| Median wages - Annual - Oil (\$2019 per 65,822 66,660 67,465 68,209 68,927 | 69,545 |
| job) | |
| Median wages - Annual - Solar (\$2019 per 56,157 56,905 57,622 58,717 59,823 6 | 60,806 |
| job) | |
| Median wages - Annual - Wind (\$2019 per 61,364 60,320 60,451 61,739 64,572 | 65,751 |
| job) | |
| On-Site or In-Plant Training - Biomass 8,314 8,010 7,705 7,367 7,270 | 7,168 |
| sector - 1 to 4 years (jobs) | |
| On-Site or In-Plant Training - Biomass 2,584 2,495 2,393 2,293 2,266 | 2,228 |
| sector - 4 to 10 years (jobs) | |
| On-Site or In-Plant Training - Biomass 13,295 12,752 12,228 11,645 11,488 | 11,329 |
| sector - None (jobs) | |
| On-Site or In-Plant Training - Biomass 576 564 550 536 533 | 529 |
| sector - Over 10 years (jobs) | |
| | 50,255 |
| sector - Up to 1 year (jobs) | |
| On-Site or In-Plant Training - CO2 sector - 0.154 0.196 0.211 0.233 | 0.249 |
| 1 to 4 years (jobs) | |
| On-Site or In-Plant Training - CO2 sector - 0.057 0.073 0.078 0.086 | 0.092 |
| 4 to 10 years (jobs) | |
| On-Site or In-Plant Training - CO2 sector - 0.171 0.217 0.234 0.259 | |
| None (jobs) | 0.276 |

Table 95: REF scenario - IMPACTS - Jobs (continued)

| Table 95: REF scenario - IMPACTS - Jobs (c | | | | | | | |
|---|------|-----------|---|----------|-------------|----------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - CO2 sector - | | | 0.006 | 0.008 | 0.009 | 0.009 | 0.01 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - CO2 sector - | | | 0.639 | 0.813 | 0.875 | 0.966 | 1.03 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Coal sector - | | 17,859 | 11,003 | 7,730 | 6,504 | 5,849 | 5,134 |
| 1 to 4 years (jobs) | | | | - | | | |
| On-Site or In-Plant Training - Coal sector - | | 6,442 | 3,981 | 2,774 | 2,336 | 2,131 | 1,898 |
| 4 to 10 years (jobs) | | -, | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | _, | _,, | _, | ,,,,, |
| On-Site or In-Plant Training - Coal sector - | | 16,850 | 10,437 | 7,376 | 6,265 | 5,686 | 5,029 |
| None (jobs) | | 10,000 | 10, 101 | 1,010 | 0,200 | 0,000 | 0,027 |
| On-Site or In-Plant Training - Coal sector - | | 761 | 475 | 333 | 283 | 262 | 236 |
| Over 10 years (jobs) | | 101 | 413 | 333 | 200 | 202 | 230 |
| On-Site or In-Plant Training - Coal sector - | | 75,351 | 46,205 | 32,545 | 27,355 | 24,357 | 21,143 |
| Up to 1 year (jobs) | | 10,001 | 40,203 | 32,343 | 21,300 | 24,331 | 21,143 |
| | | 7/ 700 | 70 // 5 | 07100 | 100.050 | 115 / /1 | 107701 |
| On-Site or In-Plant Training - Grid sector - | | 74,702 | 78,645 | 97,132 | 108,958 | 115,441 | 127,781 |
| 1 to 4 years (jobs) | | 00.000 | 07.500 | 10.100 | 17.010 | 50 (50 | E / 054 |
| On-Site or In-Plant Training - Grid sector - | | 32,808 | 34,532 | 42,639 | 47,819 | 50,652 | 56,051 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 65,863 | 69,096 | 85,047 | 95,083 | 100,413 | 110,792 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 4,253 | 4,474 | 5,521 | 6,187 | 6,550 | 7,243 |
| Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Grid sector - | | 254,880 | 268,008 | 330,627 | 370,475 | 392,110 | 433,592 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Natural gas | | 96,099 | 95,281 | 95,809 | 94,122 | 93,397 | 87,337 |
| sector - 1 to 4 years (jobs) | | | | - | - | - | |
| On-Site or In-Plant Training - Natural gas | | 42,664 | 42,609 | 43,259 | 42,963 | 42,940 | 40,366 |
| sector - 4 to 10 years (jobs) | | , | ,007 | .0,207 | ,, 00 | ,, | .0,000 |
| On-Site or In-Plant Training - Natural gas | | 90,790 | 89,018 | 88,485 | 86,038 | 84,592 | 78,439 |
| sector - None (jobs) | | 70,170 | 07,010 | 00,400 | 00,000 | 04,072 | 10,407 |
| On-Site or In-Plant Training - Natural gas | | 5,060 | 5,079 | 5,198 | 5,218 | 5,244 | 4,946 |
| sector - Over 10 years (jobs) | | 3,000 | 3,019 | 3,170 | 3,210 | 3,244 | 4,740 |
| On-Site or In-Plant Training - Natural gas | | 225 (/ 0 | 220 (20 | 220 / 0/ | 210.020 | 215.077 | 293,042 |
| | | 335,648 | 330,639 | 329,404 | 319,930 | 315,066 | 293,042 |
| sector - Up to 1 year (jobs) | | 7 / 11 | 7450 | (01 (| F / FO | 50/0 | 0.755 |
| On-Site or In-Plant Training - Nuclear | | 7,411 | 7,159 | 6,816 | 5,459 | 5,340 | 3,755 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 2,682 | 2,590 | 2,466 | 1,974 | 1,931 | 1,358 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 8,990 | 8,665 | 8,233 | 6,579 | 6,422 | 4,508 |
| sector - None (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 252 | 243 | 231 | 184 | 180 | 127 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Nuclear | | 30,889 | 29,800 | 28,338 | 22,666 | 22,145 | 15,555 |
| sector - Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - Oil sector - 1 | | 117,197 | 105,658 | 96,224 | 87,832 | 81,356 | 71,167 |
| to 4 years (jobs) | | | , | · | | , | , |
| On-Site or In-Plant Training - Oil sector - | | 41,330 | 37,551 | 34,480 | 31,757 | 29,692 | 26,252 |
| 4 to 10 years (jobs) | | 11,000 | 01,001 | 0 1, 100 | 01,101 | 27,072 | 20,202 |
| On-Site or In-Plant Training - Oil sector - | | 128,070 | 114,160 | 102,780 | 92,748 | 84,932 | 73,475 |
| None (jobs) | | 120,010 | 114,100 | 102,100 | 72,140 | 04,702 | 10,410 |
| On-Site or In-Plant Training - Oil sector - | | 4,577 | 4,235 | 3,956 | 3,702 | 3,512 | 3,145 |
| _ | | 4,511 | 4,233 | 3,950 | 3,102 | 3,312 | 3,145 |
| Over 10 years (jobs) | | E07, 000 | /E0 0/ E | /10.0/0 | 070 / 00 | 27.7.700 | 200 510 |
| On-Site or In-Plant Training - Oil sector - | | 504,220 | 452,845 | 410,849 | 373,639 | 344,793 | 300,510 |
| Up to 1 year (jobs) | | | 61.5== | | , , , , , , | | |
| On-Site or In-Plant Training - Solar PV | | 33,478 | 31,858 | 42,362 | 44,381 | 46,194 | 83,815 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 13,994 | 13,066 | 16,835 | 17,985 | 18,877 | 33,697 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV | | 34,753 | 33,394 | 44,893 | 47,221 | 49,433 | 90,445 |
| sector - None (jobs) | | | | | | | |
| | | | | 1 | | 1 | |

Table 95: REF scenario - IMPACTS - Jobs (continued)

| Table 95: REF scenario - IMPACTS - Jobs (| | | | | | | |
|--|------|-----------|-----------|-----------|-----------|-----------|-----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-Site or In-Plant Training - Solar PV | | 1,711 | 1,625 | 2,152 | 2,265 | 2,365 | 4,285 |
| sector - Over 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Solar PV sector - Up to 1 year (jobs) | | 119,801 | 115,306 | 155,575 | 162,897 | 170,053 | 311,573 |
| On-Site or In-Plant Training - Total jobs - 1 | | 369,708 | 359,698 | 381,970 | 392,484 | 389,968 | 425,641 |
| to 4 years (jobs) | | 309,100 | 339,090 | 301,910 | 392,404 | 307,700 | 425,641 |
| On-Site or In-Plant Training - Total jobs - 4 to 10 years (jobs) | | 149,227 | 145,474 | 155,110 | 161,149 | 163,029 | 178,083 |
| On-Site or In-Plant Training - Total jobs - | | 374,482 | 361,893 | 380,448 | 387,964 | 382,406 | 418,639 |
| None (jobs) | | 17000 | 17.0/0 | 10.007 | 00.040 | 00.500 | 00 (10 |
| On-Site or In-Plant Training - Total jobs - Over 10 years (jobs) | | 17,983 | 17,849 | 19,396 | 20,342 | 20,520 | 22,619 |
| On-Site or In-Plant Training - Total jobs - | | 1,431,174 | 1,381,795 | 1,449,660 | 1,474,419 | 1,452,188 | 1,575,918 |
| Up to 1 year (jobs) On-Site or In-Plant Training - Wind sector | | 14,647 | 22,083 | 28,192 | 37,862 | 35,120 | 39,483 |
| - 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - Wind sector - 4 to 10 years (jobs) | | 6,722 | 8,649 | 10,264 | 14,021 | 14,541 | 16,232 |
| On-Site or In-Plant Training - Wind sector | | 15,871 | 24,370 | 31,406 | 42,385 | 39,440 | 44,622 |
| - None (jobs) On-Site or In-Plant Training - Wind sector | | 793 | 1,155 | 1,455 | 1,965 | 1,874 | 2,109 |
| - Over 10 years (jobs) | | 175 | 1,100 | 1,433 | 1,703 | 1,014 | |
| On-Site or In-Plant Training - Wind sector - Up to 1 year (jobs) | | 52,721 | 83,385 | 108,650 | 145,982 | 132,818 | 150,247 |
| On-the-Job Training - All sectors - 1 to 4 | | 471,733 | 459,268 | 488,315 | 502,574 | 500,124 | 546,086 |
| years (jobs) | | 100 / 05 | 107.07.0 | 1////0 | 150 / 00 | 157,000 | 170.077 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 139,425 | 136,348 | 146,668 | 153,603 | 156,299 | 172,344 |
| On-the-Job Training - All sectors - None | | 130,848 | 125,108 | 129,874 | 131,332 | 129,182 | 141,119 |
| (jobs) On-the-Job Training - All sectors - Over 10 | | 21,989 | 21,517 | 22,834 | 23,230 | 22,657 | 24,956 |
| years (jobs) | | 21,707 | 21,317 | 22,034 | 23,230 | 22,001 | 24,950 |
| On-the-Job Training - All sectors - Up to 1 | | 1,578,579 | 1,524,468 | 1,598,893 | 1,625,620 | 1,599,850 | 1,736,396 |
| year (jobs) On-the-Job Training - Biomass sector - 1 | | 9,082 | 8,752 | 8,404 | 8,030 | 7,931 | 7,814 |
| to 4 years (jobs) | | | | | | | |
| 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 - | | 5,115 | 4,898 | 4,671 | 4,461 | 4,387 | 4,302 |
| None (jobs) | | 500 | F70 | 5/0 | F/0 | F/F | F/ 0 |
| On-the-Job Training - Biomass sector - Over 10 years (jobs) | | 590 | 578 | 562 | 548 | 545 | 540 |
| On-the-Job Training - Biomass sector - Up | | 65,569 | 63,189 | 60,975 | 58,425 | 57,706 | 57,044 |
| to 1 year (jobs) On-the-Job Training - CO2 sector - 1 to 4 | | | 0.199 | 0.253 | 0.273 | 0.301 | 0.321 |
| years (jobs) | | | 0.010 | 0.0/1 | 0.077 | 0.070 | 0.070 |
| 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 - None | | | 0.062 | 0.078 | 0.084 | 0.093 | 0.1 |
| (jobs) On-the-Job Training - CO2 sector - Over | | | 0.01 | 0.012 | 0.013 | 0.015 | 0.016 |
| 10 years (jobs) | | | | | | | |
| On-the-Job Training - CO2 sector - Up to 1 year (jobs) | | | 0.709 | 0.902 | 0.97 | 1.07 | 1.14 |
| On-the-Job Training - Coal sector - 1 to 4 | | 22,287 | 13,762 | 9,662 | 8,139 | 7,352 | 6,483 |
| years (jobs) On-the-Job Training - Coal sector - 4 to 10 | | 6,269 | 3,873 | 2,694 | 2,263 | 2,063 | 1,837 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Coal sector - None (jobs) | | 5,855 | 3,604 | 2,545 | 2,156 | 1,940 | 1,701 |
| (โดกจ) | | <u> </u> | | | | <u> </u> | |

Table 95: REF scenario - IMPACTS - Jobs (continued)

| Table 95: REF scenario - IMPACTS - Jobs (| continued) | | | | | | |
|---|------------|---------|--------------------|---------|---------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-the-Job Training - Coal sector - Over | | 759 | 476 | 340 | 292 | 268 | 239 |
| 10 years (jobs) | | | | | | | |
| On-the-Job Training - Coal sector - Up to 1 | | 82,094 | 50,386 | 35,517 | 29,893 | 26,663 | 23,181 |
| year (jobs) | | | | | | | |
| On-the-Job Training - Grid sector - 1 to 4 | | 97,156 | 102,233 | 126,202 | 141,496 | 149,841 | 165,774 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Grid sector - 4 to 10 | | 33,019 | 34,776 | 42,968 | 48,218 | 51,105 | 56,588 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Grid sector - None | | 21,167 | 22,225 | 27,379 | 30,638 | 32,386 | 35,768 |
| (jobs) | | | | | | | |
| On-the-Job Training - Grid sector - Over | | 3,466 | 3,651 | 4,512 | 5,065 | 5,370 | 5,949 |
| 10 years (jobs) | | | | | | | |
| On-the-Job Training - Grid sector - Up to 1 | | 277,698 | 291,869 | 359,904 | 403,104 | 426,463 | 471,382 |
| year (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 126,385 | 125,235 | 125,961 | 123,905 | 122,978 | 114,961 |
| 1 to 4 years (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 40,605 | 40,624 | 41,408 | 41,379 | 41,485 | 39,059 |
| 4 to 10 years (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 29,757 | 28,985 | 28,529 | 27,393 | 26,723 | 24,643 |
| None (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 5,419 | 5,354 | 5,332 | 5,154 | 5,079 | 4,737 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - Natural gas sector - | | 368,095 | 362,428 | 360,924 | 350,441 | 344,973 | 320,729 |
| Up to 1 year (jobs) | | | | | | | |
| On-the-Job Training - Nuclear sector - 1 to | | 9,723 | 9,391 | 8,941 | 7,159 | 7,002 | 4,924 |
| 4 years (jobs) | | | | | | | |
| On-the-Job Training - Nuclear sector - 4 | | 2,345 | 2,265 | 2,157 | 1,727 | 1,690 | 1,188 |
| to 10 years (jobs) | | | | | | | |
| On-the-Job Training - Nuclear sector - | | 3,373 | 3,253 | 3,093 | 2,473 | 2,415 | 1,696 |
| None (jobs) | | | | | | | |
| On-the-Job Training - Nuclear sector - | | 523 | 505 | 481 | 386 | 378 | 266 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - Nuclear sector - Up | | 34,260 | 33,042 | 31,412 | 25,117 | 24,533 | 17,228 |
| to 1 year (jobs) | | | | | | | |
| On-the-Job Training - Oil sector - 1 to 4 | | 144,954 | 130,489 | 118,668 | 108,164 | 100,062 | 87,426 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Oil sector - 4 to 10 | | 34,246 | 31,166 | 28,675 | 26,483 | 24,839 | 22,064 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Oil sector - None | | 48,401 | 42,836 | 38,296 | 34,340 | 31,258 | 26,919 |
| (jobs) | | | | | | | |
| On-the-Job Training - Oil sector - Over 10 | | 7,764 | 6,995 | 6,369 | 5,814 | 5,389 | 4,722 |
| years (jobs) | | | | | | | |
| On-the-Job Training - Oil sector - Up to 1 | | 560,028 | 502,962 | 456,281 | 414,875 | 382,737 | 333,419 |
| year (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - 1 | | 42,913 | 40,790 | 54,138 | 56,781 | 59,127 | 107,173 |
| to 4 years (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - 4 | | 14,173 | 13,199 | 16,932 | 18,142 | 19,068 | 33,968 |
| to 10 years (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - | | 11,945 | 11,477 | 15,374 | 16,348 | 17,253 | 31,593 |
| None (jobs) | | | | | | | |
| On-the-Job Training - Solar PV sector - | | 2,491 | 2,357 | 3,135 | 3,200 | 3,257 | 5,860 |
| Over 10 years (jobs) | | , | , | ., | -, | -, - | -, |
| On-the-Job Training - Solar PV sector - Up | | 132,215 | 127,427 | 172,238 | 180,278 | 188,216 | 345,221 |
| to 1 year (jobs) | | , | , · - · | _, | -, | ,0 | , |
| On-the-Job Training - Wind sector - 1 to 4 | | 19,232 | 28,614 | 36,338 | 48,900 | 45,831 | 51,530 |
| years (jobs) | | 17,202 | 20,017 | 30,000 | ,0,700 | 10,001 | 31,000 |
| On-the-Job Training - Wind sector - 4 to | | 6,689 | 8,435 | 9,900 | 13,537 | 14,215 | 15,833 |
| 10 years (jobs) | | 0,007 | 0, 1 00 | 7,700 | 10,001 | 17,210 | .0,000 |
| On-the-Job Training - Wind sector - None | | 5,236 | 7,830 | 9,986 | 13,522 | 12,819 | 14,498 |
| (jobs) | | 0,200 | 1,000 | 2,700 | 10,022 | 12,017 | 1-1-70 |
| (1000) | | | | | | | |

Table 95: REF scenario - IMPACTS - Jobs (continued)

| Table 95: REF scenario - IMPACTS - Jobs (c | | | | | | | |
|--|------|-----------|---------|---------|---------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| On-the-Job Training - Wind sector - Over | | 976 | 1,601 | 2,103 | 2,772 | 2,371 | 2,642 |
| 10 years (jobs) | | | | | | | |
| On-the-Job Training - Wind sector - Up to | | 58,622 | 93,163 | 121,640 | 163,485 | 148,558 | 168,190 |
| 1 year (jobs) | | | | | | | |
| Related work experience - All sectors - 1 | | 861,171 | 830,675 | 870,754 | 886,691 | 876,022 | 948,768 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - All sectors - 4 | | 544,572 | 527,263 | 554,940 | 567,124 | 561,354 | 608,672 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - | | 331,642 | 322,363 | 341,441 | 350,311 | 348,001 | 380,402 |
| None (jobs) | | | | | | | |
| Related work experience - All sectors - | | 148,813 | 144,302 | 151,477 | 153,599 | 150,486 | 162,318 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - Up | | 456,377 | 442,106 | 467,972 | 478,632 | 472,248 | 520,741 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 24,570 | 23,497 | 22,459 | 21,305 | 20,969 | 20,627 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 12,773 | 12,232 | 11,633 | 11,065 | 10,904 | 10,683 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Biomass sector | | 13,981 | 13,454 | 12,993 | 12,440 | 12,256 | 12,113 |
| - None (jobs) | | | | | | | • |
| Related work experience - Biomass sector | | 3,517 | 3,394 | 3,249 | 3,117 | 3,085 | 3,032 |
| - Over 10 years (jobs) | | -,- | -,- | -, | -, | -, | -, |
| Related work experience - Biomass sector | | 27,594 | 26,850 | 26,215 | 25,390 | 25,189 | 25,054 |
| - Up to 1 year (jobs) | | ,07. | 20,000 | 20,2.0 | 20,070 | 207.07 | _5,55 |
| Related work experience - CO2 sector - 1 | | | 0.391 | 0.497 | 0.535 | 0.591 | 0.629 |
| to 4 years (jobs) | | | 0.071 | 0.171 | 0.000 | 0.071 | 0.027 |
| Related work experience - CO2 sector - 4 | | | 0.248 | 0.315 | 0.339 | 0.375 | 0.4 |
| to 10 years (jobs) | | | 0.240 | 0.010 | 0.007 | 0.010 | 0.4 |
| Related work experience - CO2 sector - | | | 0.136 | 0.173 | 0.186 | 0.205 | 0.218 |
| None (jobs) | | | 0.130 | 0.113 | 0.100 | 0.203 | 0.210 |
| Related work experience - CO2 sector - | | | 0.076 | 0.097 | 0.105 | 0.116 | 0.123 |
| Over 10 years (jobs) | | | 0.010 | 0.071 | 0.103 | 0.110 | 0.123 |
| Related work experience - CO2 sector - | | | 0.177 | 0.225 | 0.242 | 0.268 | 0.285 |
| Up to 1 year (jobs) | | | 0.177 | 0.225 | 0.242 | 0.200 | 0.265 |
| Related work experience - Coal sector - 1 | | 44,669 | 27,422 | 19,283 | 16,215 | 14,491 | 12,628 |
| to 4 years (jobs) | | 44,009 | 21,422 | 19,203 | 10,213 | 14,471 | 12,020 |
| Related work experience - Coal sector - 4 | | 25,249 | 15,610 | 10,989 | 9,304 | 8,436 | 7,458 |
| to 10 years (jobs) | | 25,249 | 13,610 | 10,767 | 9,304 | 0,430 | 1,450 |
| | | 15,674 | 9,651 | 6,784 | 5,718 | Г 1/7 | 4,519 |
| Related work experience - Coal sector - | | 15,674 | 9,001 | 6,784 | 5,718 | 5,147 | 4,519 |
| None (jobs) | | / 200 | 20/5 | 0.005 | 0.000 | 0.1/0 | 1,914 |
| Related work experience - Coal sector - | | 6,389 | 3,965 | 2,805 | 2,382 | 2,162 | 1,914 |
| Over 10 years (jobs) | | 05.000 | 45 / 55 | 10.007 | 0.105 | 0.050 | (000 |
| Related work experience - Coal sector - | | 25,283 | 15,455 | 10,897 | 9,125 | 8,050 | 6,923 |
| Up to 1 year (jobs) | | 15 (00 (| 1// 01/ | 000 500 | 00/7/0 | 000705 | 0// 000 |
| Related work experience - Grid sector - 1 | | 156,396 | 164,314 | 202,533 | 226,749 | 239,785 | 264,923 |
| to 4 years (jobs) | | 100 / 00 | 107 (00 | 100 -00 | 110010 | | 170010 |
| Related work experience - Grid sector - 4 | | 102,492 | 107,602 | 132,532 | 148,268 | 156,675 | 172,969 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - Grid sector - | | 64,240 | 67,596 | 83,442 | 93,553 | 99,068 | 109,600 |
| None (jobs) | | | | | | | |
| Related work experience - Grid sector - | | 26,566 | 27,906 | 34,391 | 38,496 | 40,702 | 44,962 |
| Over 10 years (jobs) | | | | | | | |
| Related work experience - Grid sector - | | 82,812 | 87,338 | 108,067 | 121,456 | 128,936 | 143,007 |
| Up to 1 year (jobs) | | | | | | | |
| Related work experience - Natural gas | | 210,446 | 207,459 | 207,046 | 201,646 | 198,838 | 185,049 |
| sector - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Natural gas | | 140,009 | 138,076 | 138,085 | 135,005 | 133,351 | 124,173 |
| sector - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Natural gas | | 82,567 | 81,821 | 82,254 | 80,821 | 80,174 | 74,939 |
| sector - None (jobs) | | | | | | | |
| | | | | | | | L |

Table 95: REF scenario - IMPACTS - Jobs (continued)

| Table 95. REF Scellul to - IMPAG 15 - Jubs (| Continueuj | | | | | | |
|--|------------|----------|---------|---------|----------|---------|----------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Related work experience - Natural gas | | 38,021 | 37,332 | 37,008 | 35,713 | 35,028 | 32,487 |
| sector - Over 10 years (jobs) | | | | | | | |
| Related work experience - Natural gas | | 99,217 | 97,937 | 97,761 | 95,087 | 93,846 | 87,481 |
| sector - Up to 1 year (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 18,746 | 18,080 | 17,189 | 13,745 | 13,426 | 9,428 |
| - 1 to 4 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 12,161 | 11,727 | 11,147 | 8,912 | 8,703 | 6,111 |
| - 4 to 10 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 6,331 | 6,114 | 5,821 | 4,661 | 4,559 | 3,206 |
| - None (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 3,744 | 3,613 | 3,436 | 2,749 | 2,686 | 1,887 |
| - Over 10 years (jobs) | | | | | | | |
| Related work experience - Nuclear sector | | 9,242 | 8,923 | 8,491 | 6,796 | 6,644 | 4,670 |
| - Up to 1 year (jobs) | | | | | | | |
| Related work experience - Oil sector - 1 to | | 303,081 | 272,244 | 246,965 | 224,455 | 206,940 | 180,054 |
| 4 years (jobs) | | , | , | • | • | , | • |
| Related work experience - Oil sector - 4 to | | 183,894 | 164,890 | 149,308 | 135,444 | 124,649 | 108,255 |
| 10 years (jobs) | | · | . | • | | , | • |
| Related work experience - Oil sector - | | 107,206 | 96,690 | 88,143 | 80,619 | 74,855 | 65,744 |
| None (jobs) | | , | -, | , | ,- | , | , |
| Related work experience - Oil sector - | | 52,877 | 47,319 | 42,767 | 38,712 | 35,557 | 30,796 |
| Over 10 years (jobs) | | 0_,0:: | , | | | | |
| Related work experience - Oil sector - Up | | 148,335 | 133,305 | 121,106 | 110,446 | 102,284 | 89,701 |
| to 1 year (jobs) | | 110,000 | 100,000 | 121,100 | 110, 110 | 102,201 | 07,101 |
| Related work experience - Solar PV sector | | 70,756 | 68,003 | 91,408 | 96,299 | 100,947 | 184,802 |
| - 1 to 4 years (jobs) | | . 57. 55 | 33,333 | 7., .00 | 70,277 | .00,7 | .0 .,002 |
| Related work experience - Solar PV sector | | 46,005 | 44,050 | 58,972 | 61,963 | 64,746 | 118,093 |
| - 4 to 10 years (jobs) | | .5,555 | ,000 | 33,7.1 | 0.,700 | 0 .,0 | |
| Related work experience - Solar PV sector | | 29,264 | 28,056 | 37,586 | 39,654 | 41,591 | 76,034 |
| - None (jobs) | | 27,20 | 20,000 | 3.7555 | 07,00 | ,67. | . 3,33 |
| Related work experience - Solar PV sector | | 12,117 | 11,674 | 15,833 | 16,370 | 16,929 | 31,009 |
| - Over 10 years (jobs) | | , | , | 10,000 | 10,010 | 10,727 | 01,007 |
| Related work experience - Solar PV sector | | 45,596 | 43,466 | 58,018 | 60,462 | 62,708 | 113,878 |
| - Up to 1 year (jobs) | | .0,070 | .5, .55 | 33,0.0 | 00, .02 | 02,.00 | |
| Related work experience - Wind sector - 1 | | 32,506 | 49,656 | 63,870 | 86,278 | 80,625 | 91,257 |
| to 4 years (jobs) | | 02,000 | 47,000 | 00,010 | 00,210 | 00,020 | 71,201 |
| Related work experience - Wind sector - 4 | | 21,989 | 33,076 | 42,274 | 57,163 | 53,891 | 60,930 |
| to 10 years (jobs) | | 2.,,,,,, | 00,010 | .2,2. | 01,100 | 30,071 | 00,700 |
| Related work experience - Wind sector - | | 12,381 | 18,980 | 24,418 | 32,844 | 30,350 | 34,247 |
| None (jobs) | | 12,001 | 10,700 | 24,410 | 02,044 | 00,000 | 04,241 |
| Related work experience - Wind sector - | | 5,582 | 9,099 | 11,988 | 16,060 | 14,336 | 16,231 |
| Over 10 years (jobs) | | 0,002 | 7,077 | 11,700 | 10,000 | 14,000 | 10,201 |
| Related work experience - Wind sector - | | 18,297 | 28,832 | 37,417 | 49,870 | 44,591 | 50,028 |
| Up to 1 year (jobs) | | 10,271 | 20,002 | 31,411 | 47,010 | 77,071 | 30,020 |
| Wage income - Biomass (million \$2019) | | 4,270 | 4,184 | 4,096 | 3,994 | 4,034 | 4,069 |
| Wage income - CO2 (million \$2019) | | 4,210 | 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) | | 27,049 | 28,820 | 36,041 | 40,954 | 43,974 | 49,351 |
| Wage income - Natural Gas (million \$2019) | | 37,783 | 37,773 | 38,180 | 37,614 | 37,575 | 35,454 |
| Wage income - Nuclear (million \$2019) | | 3,590 | 3,546 | 38,180 | 2,833 | 2,838 | 2,046 |
| Wage income - Oil (million \$2019) | | | | 43,737 | | | |
| | | 52,354 | 47,625 | | 40,221 | 37,516 | 33,003 |
| Wage income - Solar (million \$2019) | | 11,441 | 11,111 | 15,087 | 16,132 | 17,164 | 31,851 |
| Wage income - Wind (million \$2019) | | 5,569 | 8,423 | 10,879 | 14,954 | 14,451 | 16,615 |