

Net-Zero America - Florida data

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

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Table 1: E+ scenario - IMPACTS - Health

| Table 1: E+ scenario - IMPACTS - Health | | | | | | | |
|---|------|-------|-------|-------|-------|-------|--------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Premature deaths from air pollution - | | 59.2 | 0.262 | 0.193 | 0.088 | 0.042 | 0.002 |
| Fuel Comb - Electric Generation - Coal | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 83.7 | 78.1 | 65.2 | 58.1 | 27.3 | 5.51 |
| Fuel Comb - Electric Generation - Natural | | | | | | | |
| Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 655 | 621 | 479 | 281 | 129 | 49.3 |
| Mobile - On-Road (deaths) | | | | | | | |
| Premature deaths from air pollution - Gas | | 53 | 49.2 | 37.4 | 22.2 | 10.5 | 4.55 |
| Stations (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 13.4 | 11.2 | 8.21 | 5.44 | 3.62 | 2.58 |
| Fuel Comb - Residential - Natural Gas | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1.63 | 1.34 | 0.939 | 0.57 | 0.28 | 0.122 |
| Fuel Comb - Residential - Oil (deaths) | | | | | | | _ |
| Premature deaths from air pollution - | | 3.96 | 3.68 | 3.09 | 2.37 | 1.67 | 1.14 |
| Fuel Comb - Residential - Other (deaths) | | 0.70 | 0.00 | 0.07 | 2.01 | 1.01 | 11.1-7 |
| Premature deaths from air pollution - | | 2.82 | 2.76 | 2.68 | 2.59 | 2.5 | 2.39 |
| Fuel Comb - Comm/Institutional - Coal | | 2.02 | 2.10 | 2.00 | 2.07 | 2.5 | 2.57 |
| (deaths) | | | | | | | |
| | | 05.7 | 23.5 | 10 / | 10.0 | 01/ | 7.27 |
| Premature deaths from air pollution - | | 25.4 | 23.5 | 18.4 | 12.8 | 9.16 | 1.21 |
| Fuel Comb - Comm/Institutional - Natural | | | | | | | |
| Gas (deaths) | | | 1.5- | 110 | | | |
| Premature deaths from air pollution - | | 2.22 | 1.87 | 1.48 | 1.1 | 0.792 | 0.533 |
| Fuel Comb - Comm/Institutional - Oil | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1.42 | 1.22 | 1.02 | 0.813 | 0.609 | 0.409 |
| Fuel Comb - Comm/Institutional - Other | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1.27 | 0.481 | 0.481 | 0.476 | 0.486 | 0.49 |
| Industrial Processes - Coal Mining | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 61.4 | 59 | 55 | 43.9 | 33.4 | 21.3 |
| Industrial Processes - Oil & Gas | | | | | | | |
| Production (deaths) | | | | | | | |
| Monetary damages from air pollution - | | 524 | 2.32 | 1.71 | 0.784 | 0.369 | 0.022 |
| Fuel Comb - Electric Generation - Coal | | 024 | 2.02 | | 0.104 | 0.007 | 0.022 |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 741 | 692 | 577 | 515 | 242 | 48.8 |
| Fuel Comb - Electric Generation - Natural | | 741 | 092 | 511 | 313 | 242 | 40.0 |
| | | | | | | | |
| Gas (million \$2019) | | 5 000 | E 547 | | 0.500 | 11/0 | |
| Monetary damages from air pollution - | | 5,828 | 5,517 | 4,260 | 2,502 | 1,148 | 438 |
| Mobile - On-Road (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 469 | 436 | 331 | 197 | 93.2 | 40.3 |
| Gas Stations (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 119 | 99.6 | 72.7 | 48.2 | 32.1 | 22.9 |
| Fuel Comb - Residential - Natural Gas | | | | | | | |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 14.5 | 11.9 | 8.32 | 5.05 | 2.48 | 1.08 |
| Fuel Comb - Residential - Oil (million | | | | | | | |
| \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 35.1 | 32.6 | 27.4 | 21 | 14.8 | 10.1 |
| Fuel Comb - Residential - Other (million | | | | | | | - |
| \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 25 | 24.4 | 23.7 | 22.9 | 22.1 | 21.1 |
| Fuel Comb - Comm/Institutional - Coal | | 20 | 27.7 | 20.1 | 22.7 | 22.1 | ١.١ |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 225 | 208 | 163 | 114 | 81.1 | 64.4 |
| Fuel Comb - Comm/Institutional - Natural | | 220 | 200 | 103 | 114 | 01.1 | 04.4 |
| | | | | | | | |
| Gas (million \$2019) | | | | | | | |
| | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Monetary damages from air pollution - | | 19.7 | 16.5 | 13.1 | 9.77 | 7.01 | 4.71 |
| Fuel Comb - Comm/Institutional - Oil | | | | | | | |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 12.6 | 10.8 | 9.02 | 7.2 | 5.39 | 3.62 |
| Fuel Comb - Comm/Institutional - Other | | | | | | | |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 11.2 | 4.24 | 4.24 | 4.2 | 4.29 | 4.32 |
| Industrial Processes - Coal Mining | | | | | | | |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 545 | 524 | 488 | 390 | 297 | 189 |
| Industrial Processes - Oil & Gas | | | | | | | |
| Production (million \$2019) | | | | | | | |

Table 2: E+ scenario - IMPACTS - Jobs

| Table 2: E+ Scenario - IMPACTS - Jobs | | | | | | | |
|---|------|--------|--------|--------|--------|--------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By economic sector - Agriculture (jobs) | | 441 | 918 | 473 | 1,041 | 1,170 | 1,057 |
| By economic sector - Construction (jobs) | | 22,966 | 35,607 | 49,148 | 48,285 | 48,084 | 62,039 |
| By economic sector - Manufacturing | | 9,354 | 14,893 | 15,700 | 14,391 | 16,206 | 16,559 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 5,402 | 3,987 | 2,732 | 1,719 | 1,176 | 734 |
| By economic sector - Other (jobs) | | 2,764 | 5,515 | 9,050 | 9,204 | 9,800 | 14,543 |
| By economic sector - Pipeline (jobs) | | 1,350 | 1,447 | 948 | 737 | 544 | 481 |
| By economic sector - Professional (jobs) | | 10,149 | 14,407 | 19,890 | 20,829 | 21,797 | 28,774 |
| By economic sector - Trade (jobs) | | 7,282 | 9,818 | 13,586 | 13,808 | 14,498 | 20,077 |
| By economic sector - Utilities (jobs) | | 21,430 | 26,203 | 34,015 | 38,434 | 40,387 | 48,245 |
| By resource sector - Biomass (jobs) | | 1,893 | 2,532 | 1,348 | 3,135 | 4,266 | 4,514 |
| By resource sector - CO2 (jobs) | | 82 | 2,816 | 892 | 1,078 | 1,646 | 2,234 |
| By resource sector - Coal (jobs) | | 1,089 | 0 | 0 | 0 | 0 | 0 |
| By resource sector - Grid (jobs) | | 25,471 | 35,420 | 55,439 | 65,178 | 70,297 | 88,648 |
| By resource sector - Natural Gas (jobs) | | 16,891 | 14,613 | 12,227 | 11,292 | 9,629 | 7,108 |
| By resource sector - Nuclear (jobs) | | 1,917 | 1,886 | 1,856 | 1,827 | 1,799 | 1,604 |
| By resource sector - Oil (jobs) | | 11,673 | 9,194 | 6,500 | 4,263 | 2,686 | 1,516 |
| By resource sector - Solar (jobs) | | 22,070 | 45,666 | 66,763 | 60,147 | 59,835 | 84,164 |
| By resource sector - Wind (jobs) | | 52.9 | 667 | 516 | 1,529 | 3,503 | 2,722 |
| By education level - All sectors - High | | 34,232 | 48,560 | 62,678 | 63,807 | 65,907 | 82,346 |
| school diploma or less (jobs) | | , , | -, | - , | , | | - ,- |
| By education level - All sectors - | | 25,716 | 36,070 | 47,016 | 48,031 | 49,754 | 62,529 |
| Associates degree or some college (jobs) | | , - | , - | , - | -, | , - | - ,- |
| By education level - All sectors - | | 16,591 | 22,044 | 27,938 | 28,470 | 29,542 | 36,906 |
| Bachelors degree (jobs) | | , | | , | , | . | • |
| By education level - All sectors - Masters | | 4,032 | 5,353 | 6,904 | 7,116 | 7,399 | 9,361 |
| or professional degree (jobs) | | | | | | . | • |
| By education level - All sectors - Doctoral | | 567 | 767 | 1,006 | 1,025 | 1,059 | 1,367 |
| degree (jobs) | | | | , | | . | • |
| Related work experience - All sectors - | | 11,803 | 16,482 | 21,334 | 21,863 | 22,650 | 28,449 |
| None (jobs) | | | | • | | . | • |
| Related work experience - All sectors - Up | | 16,007 | 22,947 | 29,780 | 30,259 | 31,352 | 39,390 |
| to 1 year (jobs) | | | | , | , | | • |
| Related work experience - All sectors - 1 | | 29,289 | 40,339 | 51,946 | 53,066 | 54,926 | 68,811 |
| to 4 years (jobs) | | | , | , | | · | • |
| Related work experience - All sectors - 4 | | 19,049 | 26,185 | 33,753 | 34,400 | 35,544 | 44,462 |
| to 10 years (jobs) | | | | · | | . | • |
| Related work experience - All sectors - | | 4,990 | 6,840 | 8,728 | 8,862 | 9,189 | 11,398 |
| Over 10 years (jobs) | | | - | • | | . | • |
| On-the-Job Training - All sectors - None | | 4,403 | 6,138 | 7,974 | 8,064 | 8,342 | 10,581 |
| (jobs) | | , | -, | , , | -, | -, | -, |
| On-the-Job Training - All sectors - Up to 1 | | 52,916 | 73,384 | 94,125 | 96,090 | 99,742 | 124,678 |
| year (jobs) | | , - | , | , - | | | , |

| Table 2: E+ scen | ιανίο - ΤΜΟΛΥΤΟ | - Inhe Leontini | ındl |
|--------------------|---------------------|------------------|------|
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| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|---------|
| On-the-Job Training - All sectors - 1 to 4 years (jobs) | | 17,359 | 24,169 | 31,414 | 32,044 | 33,046 | 41,401 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 5,675 | 7,975 | 10,588 | 10,832 | 11,079 | 14,044 |
| On-the-Job Training - All sectors - Over 10 years (jobs) | | 785 | 1,128 | 1,441 | 1,419 | 1,454 | 1,805 |
| On-Site or In-Plant Training - All sectors - None (jobs) | | 13,083 | 18,309 | 23,608 | 23,975 | 24,816 | 31,167 |
| On-Site or In-Plant Training - All sectors - Up to 1 year (jobs) | | 48,143 | 66,744 | 85,758 | 87,554 | 90,839 | 113,613 |
| On-Site or In-Plant Training - All sectors - 1 to 4 years (jobs) | | 13,429 | 18,725 | 24,317 | 24,798 | 25,591 | 32,064 |
| On-Site or In-Plant Training - All sectors - 4 to 10 years (jobs) | | 5,774 | 8,021 | 10,554 | 10,780 | 11,028 | 13,924 |
| On-Site or In-Plant Training - All sectors - Over 10 years (jobs) | | 709 | 994 | 1,304 | 1,342 | 1,388 | 1,742 |
| Wage income - All (million \$2019) | | 4,077 | 5,591 | 7,239 | 7,501 | 7,859 | 9,940 |

Table 3: E+ scenario - IMPACTS - Fossil fuel industries

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|-------|-------|------|-------|--------|
| Oil consumption - Annual (million bbls) | | 251 | 213 | 161 | 113 | 74.7 | 44.5 |
| Oil consumption - Cumulative (million | | | | | | | 4,994 |
| bbls) | | | | | | | |
| Oil production - Annual (million bbls) | | 2.38 | 2.39 | 2.39 | 1.89 | 1.54 | 1.02 |
| Natural gas consumption - Annual (tcf) | | 1,143 | 964 | 773 | 582 | 366 | 254 |
| Natural gas consumption - Cumulative | | | | | | | 23,282 |
| (tcf) | | | | | | | |
| Natural gas production - Annual (tcf) | | 0.703 | 0.665 | 0.579 | 0.49 | 0.388 | 0.302 |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|------|
| Final energy use - Transportation (PJ) | 1,917 | 1,804 | 1,617 | 1,384 | 1,172 | 1,037 | 974 |
| Final energy use - Residential (PJ) | 511 | 493 | 475 | 450 | 430 | 422 | 425 |
| Final energy use - Commercial (PJ) | 434 | 437 | 427 | 413 | 402 | 400 | 406 |
| Final energy use - Industry (PJ) | 555 | 584 | 599 | 624 | 651 | 665 | 684 |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Electricity distribution capital invested - | | 7.9 | 7.56 | 13.5 | 13.9 | 16.3 | 17 |
| Cumulative 5-yr (billion \$2018) | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Vehicle stocks - LDV – EV (1000 units) | 237 | 1,656 | 3,074 | 8,041 | 13,008 | 16,976 | 20,945 |
| Vehicle stocks - LDV – All others (1000 | 17,465 | 16,630 | 15,795 | 11,510 | 7,226 | 4,088 | 950 |
| units) | | | | | | | |
| Light-duty vehicle capital costs vs. REF - | | 3,333 | 8,621 | 13,843 | 21,020 | 22,822 | 21,789 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Public EV charging plugs - DC Fast (1000 | 0.717 | | 5.18 | | 21.9 | | 35.3 |
| units) | | | | | | | |
| Public EV charging plugs - L2 (1000 units) | 3.3 | | 124 | | 526 | · | 848 |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|------|-------|-------|-------|-------|-------|
| Sales of space heating units - Electric | 51.7 | 60.3 | 83.9 | 89.2 | 89.3 | 89.1 | 89 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 40 | 35.5 | 15 | 10.4 | 10.3 | 10.5 | 10.6 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 7.51 | 3.51 | 0.99 | 0.435 | 0.414 | 0.413 | 0.412 |
| Sales of space heating units - Fossil (%) | 0.822 | 0.7 | 0.133 | 0.006 | 0 | 0 | 0 |
| Sales of water heating units - Electric | 0 | 12.3 | 65.2 | 77 | 77.6 | 77.6 | 77.6 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 88.4 | 81.8 | 31.6 | 20.4 | 19.9 | 19.9 | 19.9 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas Furnace | 6.88 | 3.27 | 0.619 | 0.026 | 0 | 0 | 0 |
| (%) | | | | | | | |
| Sales of water heating units - Other (%) | 4.69 | 2.6 | 2.57 | 2.58 | 2.57 | 2.54 | 2.53 |
| Sales of cooking units - Electric | 96 | 96.9 | 99.5 | 100 | 100 | 100 | 100 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 3.99 | 3.14 | 0.538 | 0.027 | 0 | 0 | 0 |
| Residential HVAC investment in 2020s vs. | | 16.2 | 21.3 | | | | |
| REF - Cumulative 5-yr (billion \$2018) | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|--------|-------|------|------|------|
| Sales of space heating units - Electric | 23.9 | 27 | 70.6 | 83.8 | 84.8 | 85 | 85.1 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 22.7 | 8.53 | 10.3 | 12.4 | 13.2 | 13 | 12.8 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 53.5 | 60.7 | 18.4 | 3.73 | 1.99 | 2 | 2.02 |
| Sales of space heating units - Fossil (%) | 0 | 3.82 | 0.711 | 0.031 | 0 | 0 | 0 |
| Sales of water heating units - Electric | 0.849 | 10.5 | 54.3 | 64 | 64.4 | 64.5 | 64.5 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 20.9 | 11.5 | 28.7 | 32.5 | 32.7 | 32.7 | 32.7 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas (%) | 69.5 | 73.9 | 14 | 0.589 | 0 | 0 | 0 |
| Sales of water heating units - Other (%) | 8.69 | 4.13 | 3.09 | 2.85 | 2.86 | 2.83 | 2.82 |
| Sales of cooking units - Electric | 32 | 46 | 79.9 | 86.5 | 86.9 | 86.9 | 86.9 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 68 | 54 | 20.1 | 13.5 | 13.1 | 13.1 | 13.1 |
| Commercial HVAC investment in 2020s - | | 66,758 | 74,510 | | | | |
| Cumulative 5-yr (million \$2018) | | | | | | | |

Table 9: E+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|--------|--------|--------|--------|--------|---------|---------|
| Installed thermal - Coal (MW) | 8,052 | 0 | 0 | 0 | 0 | 0 | 0 |
| Installed thermal - Natural gas (MW) | 45,532 | 40,312 | 41,543 | 44,980 | 38,512 | 25,734 | 20,051 |
| Installed thermal - Nuclear (MW) | 3,797 | 3,797 | 3,797 | 3,797 | 3,797 | 3,797 | 2,921 |
| Installed renewables - Rooftop PV (MW) | 723 | 1,179 | 1,661 | 2,333 | 3,256 | 4,426 | 5,903 |
| Installed renewables - Solar - Base land use assumptions (MW) | 2,649 | 11,767 | 33,745 | 71,032 | 96,323 | 118,754 | 164,102 |
| Installed renewables - Offshore Wind - | 0 | 93.8 | 93.8 | 93.8 | 920 | 1,541 | 9,078 |
| Base land use assumptions (MW) | | | | | | | |
| Installed renewables - Solar - | 2,649 | 9,317 | 32,836 | 61,238 | 88,139 | 113,583 | 162,293 |
| Constrained land use assumptions (MW) | | | | | | | |
| Installed renewables - Offshore Wind - | 0 | 0 | 0 | 0 | 0 | 0 | 9,078 |
| Constrained land use assumptions (MW) | | | | | | | |
| Capital invested - Solar PV - Base (billion | | 12.2 | 26.3 | 41.1 | 26.3 | 22 | 0 |
| \$2018) | | | | | | | |
| Capital invested - Offshore Wind - Base | | 0.266 | 0 | 0 | 1.43 | 0.916 | 9.44 |
| (billion \$2018) | | | | | | | |

Table 9: E+ scenario - PILLAR 2: Clean Electricity - Generating capacity (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|-------|-------|-------|-------|-------|
| Capital invested - Solar PV - Constrained (billion \$2018) | | 13.8 | 28.1 | 31.2 | 32.4 | 20.3 | 0 |
| Capital invested - Biomass power plant (billion \$2018) | 0 | 0.003 | 0.163 | 0.013 | 0 | 0 | 0 |
| Capital invested - Biomass w/ccu allam power plant (billion \$2018) | 0 | 0 | 0 | 0.02 | 0.005 | 0.002 | 0.019 |
| Capital invested - Biomass w/ccu power plant (billion \$2018) | 0 | 0 | 0.043 | 0 | 0.006 | 2.06 | 0.012 |

Table 10: E+ scenario - PILLAR 2: Clean Electricity - Generation

| 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|-------|------------------------------------|--|---|--|---|---|
| 6,248 | 24,952 | 69,352 | 144,033 | 194,716 | 239,156 | 331,849 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 285 | 285 | 285 | 2,790 | 4,681 | 27,587 |
| 6,093 | 19,784 | 67,349 | 124,210 | 178,091 | 228,553 | 328,145 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 285 | 285 | 285 | 2,790 | 4,681 | 27,587 |
| 0 | 5.92 | 326 | 351 | 351 | 351 | 351 |
| 0 | 0 | 48.5 | 48.5 | 55.5 | 2,368 | 2,382 |
| 0 | 0 | 0 | 20.2 | 24.9 | 26.9 | 45.8 |
| | 6,248 0 0 6,093 0 0 | 6,248 24,952 0 0 0 285 6,093 19,784 0 0 0 285 0 5.92 0 0 | 6,248 24,952 69,352 0 0 0 0 285 285 6,093 19,784 67,349 0 0 0 0 285 285 0 5.92 326 0 0 48.5 | 6,248 24,952 69,352 144,033 0 0 0 0 0 285 285 285 6,093 19,784 67,349 124,210 0 0 0 0 0 285 285 285 0 5.92 326 351 0 0 48.5 48.5 | 6,248 24,952 69,352 144,033 194,716 0 0 0 0 0 0 285 285 285 2,790 6,093 19,784 67,349 124,210 178,091 0 0 0 0 0 0 0 285 285 285 2,790 0 5.92 326 351 351 0 0 48.5 48.5 55.5 | 6,248 24,952 69,352 144,033 194,716 239,156 0 0 0 0 0 0 0 0 285 285 285 2,790 4,681 6,093 19,784 67,349 124,210 178,091 228,553 0 0 0 0 0 0 0 285 285 2,790 4,681 0 5.92 326 351 351 351 0 0 48.5 48.5 55.5 2,368 |

Table 11: E+ scenario - PILLAR 3: Clean fuels - Bioenergy

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|-------|-------|-------|
| Number of facilities - Power (quantity) | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Number of facilities - Power ccu | 0 | 0 | 1 | 1 | 2 | 4 | 5 |
| (quantity) | | | | | | | |
| Number of facilities - Allam power w ccu | 0 | 0 | 0 | 1 | 2 | 3 | 4 |
| (quantity) | | | | | | | |
| Number of facilities - Beccs hydrogen | 0 | 0 | 0 | 1 | 7 | 9 | 12 |
| (quantity) | | | | | | | |
| Number of facilities - Diesel (quantity) | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| Number of facilities - Diesel ccu (quantity) | 0 | 0 | 0 | 1 | 2 | 3 | 4 |
| Number of facilities - Pyrolysis (quantity) | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| Number of facilities - Pyrolysis ccu | 0 | 0 | 0 | 1 | 2 | 3 | 4 |
| (quantity) | | | | | | | |
| Number of facilities - Sng (quantity) | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Number of facilities - Sng ccu (quantity) | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| Conversion capital investment - | | 3.4 | 221 | 785 | 5,743 | 5,424 | 2,560 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Biomass purchases (million \$2018/y) | | 7.28 | 21.8 | 58.6 | 333 | 579 | 700 |

Table 12: E+ scenario - PILLAR 4: CCUS - CO2 capture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------------------|------|------|------|------|------|------|------|
| Annual - All (MMT) | | 0 | 0.08 | 3.73 | 14.5 | 24.6 | 31.4 |
| Annual - BECCS (MMT) | | 0 | 0.05 | 0.98 | 8.35 | 15.1 | 18.4 |
| Annual - NGCC (MMT) | | 0 | 0.03 | 2.75 | 2.87 | 2.62 | 5.94 |
| Annual - Cement and lime (MMT) | | 0 | 0 | 0 | 3.32 | 6.84 | 7.07 |
| Cumulative - All (MMT) | | 0 | 0.08 | 3.81 | 18.3 | 42.9 | 74.3 |
| Cumulative - BECCS (MMT) | | 0 | 0.05 | 1.03 | 9.38 | 24.5 | 42.8 |
| Cumulative - NGCC (MMT) | | 0 | 0.03 | 2.78 | 5.65 | 8.27 | 14.2 |
| Cumulative - Cement and lime (MMT) | | 0 | 0 | 0 | 3.32 | 10.2 | 17.2 |

Table 13: E+ scenario - PILLAR 4: CCUS - CO2 pipelines

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|-------|-------|-------|-------|-------|
| Trunk (km) | | 0 | 636 | 636 | 636 | 636 | 636 |
| Spur (km) | | 0 | 104 | 460 | 897 | 1,644 | 2,685 |
| All (km) | | 0 | 739 | 1,095 | 1,533 | 2,279 | 3,321 |
| Cumulative investment - Trunk (million \$2018) | | 0 | 3,047 | 3,047 | 3,047 | 3,047 | 3,047 |
| Cumulative investment - Spur (million \$2018) | | 0 | 55 | 278 | 553 | 1,109 | 1,708 |
| Cumulative investment - All (million \$2018) | | 0 | 3,102 | 3,325 | 3,600 | 4,157 | 4,755 |

Table 14: E+ scenario - PILLAR 4: CCUS - CO2 storage

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|-------|-------|-------|
| Annual (MMT) | | 0 | 4.39 | 10.6 | 19.9 | 31 | 42.9 |
| Injection wells (wells) | | 0 | 8 | 32 | 56 | 92 | 116 |
| Resource characterization, appraisal, | | 159 | 552 | 785 | 785 | 785 | 785 |
| permitting costs (million \$2020) | | | | | | | |
| Wells and facilities construction costs | | 0 | 245 | 955 | 1,702 | 2,846 | 3,533 |
| (million \$2020) | | | | | | | |

Table 15: E+ scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Carbon sink potential - Low - Accelerate | | | | | | | -66 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Avoid | | | | | | | -654 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Extend | | | | | | | -2,380 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Improve | | | | | | | -1,929 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -3,10 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -344 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -23 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -613 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Restore | | | | | | | -1,612 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - All (not | | | | | | | -11,529 |
| counting overlap) (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Accelerate | | | | | | | -997 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Avoid | | | | | | | -2,289 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Extend | | | | | | | -4,287 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Improve | | | | | | | -2,827 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | -6,203 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | -664 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -346 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -4,354 |
| pasture (1000 tCO2e/y) | | | | | | | |

Table 15: E+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item Conhon sink notantial, Mid. Bostone | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 205 |
|--|------|------|------|------|------|------|--------|
| Carbon sink potential - Mid - Restore | | | | | | | -3,19 |
| productivity (1000 tCO2e/y) | | | | | | | 0544 |
| Carbon sink potential - Mid - All (not | | | | | | | -25,16 |
| counting overlap) (1000 tC02e/y) | | | | | | | 1.00 |
| Carbon sink potential - High - Accelerate | | | | | | | -1,32 |
| regeneration (1000 tC02e/y) | | | | | | | 0.00 |
| Carbon sink potential - High - Avoid | | | | | | | -3,92 |
| deforestation (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - Extend | | | | | | | -6,19 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Improve | | | | | | | -3,79 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | -9,30 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | -98 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -46 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -8,09 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - All (not | | | | | | | -38,86 |
| counting overlap) (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Restore | | | | | | | -4,78 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 10 |
| Low - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 49 |
| Low - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,21 |
| Low - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 69 |
| Low - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | |
| Low - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 49. |
| Low - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 15. |
| Low - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 39. |
| Low - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | + | | 95 |
| Low - Restore productivity (1000 | | | | | | | . 0 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | + | | 3,57 |
| Low - Total impacted (over 30 years) | | | | | | | 3,51 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 16 |
| Mid - Accelerate regeneration (1000 | | | | | | | .0 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | + | | 51 |
| Mid - Avoid deforestation (over 30 years) | | | | | | | 31 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0.10 |
| Mid - Extend rotation length (1000 | | | | | | | 2,18 |
| .v Externi i in 2000 (P1000 1 | 1 | 1 | 1 | 1 | 1 | I | |

Table 15: E+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|-------|
| Land impacted for carbon sink potential - | | | | | | | 1,051 |
| 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 - | | | | | | | 71.3 |
| Mid - Increase trees outside forests (1000 | | | | | | | 11.3 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 22.9 |
| Mid - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 288 |
| Mid - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,931 |
| Mid - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 6,227 |
| Mid - Total impacted (over 30 years) (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 217 |
| High - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | F04 |
| Land impacted for carbon sink potential - | | | | | | | 531 |
| High - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,159 |
| High - Extend rotation length (1000 | | | | | | | 3,137 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,397 |
| High - Improve plantations (1000 | | | | | | | 1,071 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| High - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 93.4 |
| High - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 30.5 |
| High - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 230 |
| High - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,585 |
| High - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | 70/0 |
| Land impacted for carbon sink potential - High - Total impacted (over 30 years) | | | | | | | 7,243 |
| (1000 hectares) | | | | | | | |
| (1000 Hectal es) | | | | | | | |

Table 16: E+ scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------------------------------|------|------|------|------|------|------|--------|
| Carbon sink potential - Moderate | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,066 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -14.8 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,081 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |

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

Item

Carbon sink potential - Aggressive

deployment - Corn-ethanol to energy

| grasses (1000 tC02e/y) | | | | | | | 0.077 |
|--|------|---|---|--|--|---|--|
| Carbon sink potential - Aggressive | | | | | | | -2,077 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | 00.7 |
| Carbon sink potential - Aggressive | | | | | | | -29.6 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,107 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 559 |
| deployment - Cropland measures (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 26.9 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 586 |
| deployment - Total (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 0 |
| Aggressive deployment - Corn-ethanol to | | | | | | | |
| energy grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 1,091 |
| Aggressive deployment - Cropland | | | | | | | |
| measures (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 53.8 |
| Aggressive deployment - Permanent | | | | | | | |
| conservation cover (1000 hectares) | | | | | | | |
| | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 1.144 |
| Land impacted for carbon sink - Aggressive deployment - Total (1000 | | | | | | | 1,144 |
| Land impacted for carbon sink - Aggressive deployment - Total (1000 hectares) | | | | | | | 1,144 |
| Aggressive deployment - Total (1000 | | | | | | | 1,144 |
| Aggressive deployment - Total (1000 | | | | | | | 1,144 |
| Aggressive deployment - Total (1000 | | | | | | | 1,144 |
| Aggressive deployment - Total (1000 hectares) | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item | 2020 | 2025 59 2 | | 2035 0.193 | 2040 0.088 | 2045 0.042 | 2050 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - | 2020 | 2025 59.2 | 2030 0.262 | 2035 0.193 | 2040 0.088 | 2045 0.042 | |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal | 2020 | | | | | | 2050 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | 2020 | 59.2 | 0.262 | 0.193 | 0.088 | 0.042 | 2050 0.002 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - | 2020 | | | | | | 2050 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural | 2020 | 59.2 | 0.262 | 0.193 | 0.088 | 0.042 | 2050 0.002 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | 2020 | 59.2 83.8 | 66.2 | 0.193 | 0.088 | 2.94 | 2050 0.002 1.37 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - | 2020 | 59.2 | 0.262 | 0.193 | 0.088 | 0.042 | 2050 0.002 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) | 2020 | 59.2 83.8 668 | 66.2 | 0.193 37.2 681 | 0.088 | 2.94 | 2050 0.002 1.37 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas | 2020 | 59.2 83.8 | 66.2 | 0.193 | 0.088 | 2.94 | 2050 0.002 1.37 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) | 2020 | 59.2 83.8 668 54.2 | 0.262 66.2 687 55.7 | 0.193 37.2 681 54.7 | 0.088 13.5 624 49.8 | 0.042 2.94 506 40.1 | 2050 0.002 1.37 353 28 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Gas Stations (deaths) | 2020 | 59.2 83.8 668 | 66.2 | 0.193 37.2 681 | 0.088 | 2.94 | 2050 0.002 1.37 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas | 2020 | 59.2 83.8 668 54.2 | 0.262 66.2 687 55.7 | 0.193 37.2 681 54.7 | 0.088 13.5 624 49.8 | 0.042 2.94 506 40.1 | 2050 0.002 1.37 353 28 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | 2020 | 59.2 83.8 668 54.2 | 0.262 66.2 687 55.7 | 0.193 37.2 681 54.7 | 0.088 13.5 624 49.8 | 0.042 2.94 506 40.1 8.42 | 2050 0.002 1.37 353 28 6.5 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | 2020 | 59.2 83.8 668 54.2 | 0.262 66.2 687 55.7 | 0.193 37.2 681 54.7 | 0.088 13.5 624 49.8 | 0.042 2.94 506 40.1 | 2050 0.002 1.37 353 28 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | 2020 | 59.2 83.8 668 54.2 13.5 | 0.262 66.2 687 55.7 12.4 | 0.193 37.2 681 54.7 11.4 | 0.088 13.5 624 49.8 10.1 | 0.042 2.94 506 40.1 8.42 | 2050 0.002 1.37 353 28 6.5 |
| Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | 2020 | 59.2 83.8 668 54.2 | 0.262 66.2 687 55.7 | 0.193 37.2 681 54.7 | 0.088 13.5 624 49.8 | 0.042 2.94 506 40.1 8.42 | 2050 0.002 1.37 353 28 6.5 |
| Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | 2020 | 59.2 83.8 668 54.2 13.5 | 0.262 66.2 687 55.7 12.4 | 0.193 37.2 681 54.7 11.4 1.54 4.08 | 0.088 13.5 624 49.8 10.1 1.37 3.91 | 0.042 2.94 506 40.1 8.42 1.07 3.45 | 2050 0.002 1.37 353 28 6.5 0.748 2.88 |
| Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | 2020 | 59.2 83.8 668 54.2 13.5 | 0.262 66.2 687 55.7 12.4 | 0.193 37.2 681 54.7 11.4 | 0.088 13.5 624 49.8 10.1 | 0.042 2.94 506 40.1 8.42 | 2050 0.002 1.37 353 28 6.5 |
| Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal | 2020 | 59.2 83.8 668 54.2 13.5 | 0.262 66.2 687 55.7 12.4 | 0.193 37.2 681 54.7 11.4 1.54 4.08 | 0.088 13.5 624 49.8 10.1 1.37 3.91 | 0.042 2.94 506 40.1 8.42 1.07 3.45 | 2050 0.002 1.37 353 28 6.5 0.748 2.88 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | 2020 | 59.2 83.8 668 54.2 13.5 1.66 4.02 2.82 | 0.262 66.2 687 55.7 12.4 1.6 4.06 2.76 | 0.193 37.2 681 54.7 11.4 1.54 4.08 2.68 | 0.088 13.5 624 49.8 10.1 1.37 3.91 2.59 | 0.042 2.94 506 40.1 8.42 1.07 3.45 2.5 | 2050 0.002 1.37 353 28 6.5 0.748 2.88 2.39 |
| Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) Premature deaths from air pollution - | 2020 | 59.2 83.8 668 54.2 13.5 | 0.262 66.2 687 55.7 12.4 | 0.193 37.2 681 54.7 11.4 1.54 4.08 | 0.088 13.5 624 49.8 10.1 1.37 3.91 | 0.042 2.94 506 40.1 8.42 1.07 3.45 | 2050 0.002 1.37 353 28 6.5 0.748 2.88 |
| Aggressive deployment - Total (1000 hectares) Table 17: E- scenario - IMPACTS - Health Item Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) Premature deaths from air pollution - Mobile - On-Road (deaths) Premature deaths from air pollution - Gas Stations (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | 2020 | 59.2 83.8 668 54.2 13.5 1.66 4.02 2.82 | 0.262 66.2 687 55.7 12.4 1.6 4.06 2.76 | 0.193 37.2 681 54.7 11.4 1.54 4.08 2.68 | 0.088 13.5 624 49.8 10.1 1.37 3.91 2.59 | 0.042 2.94 506 40.1 8.42 1.07 3.45 2.5 | 2050 0.002 1.37 353 28 6.5 0.748 2.88 2.39 |

Table 17: E- scenario - IMPACTS - Health (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|-------|-------|-------|
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 2.23 | 2.04 | 1.87 | 1.65 | 1.41 | 1.18 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 1.42 | 1.31 | 1.19 | 1.07 | 0.954 | 0.834 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 1.22 | 0.483 | 0.489 | 0.489 | 0.488 | 0.462 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 61.3 | 56.9 | 50.7 | 45.6 | 41.4 | 29.7 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 524 | 2.32 | 1.71 | 0.784 | 0.369 | 0.022 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 743 | 587 | 329 | 119 | 26.1 | 12.1 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 5,938 | 6,110 | 6,052 | 5,549 | 4,499 | 3,142 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 480 | 493 | 484 | 441 | 355 | 248 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 120 | 110 | 101 | 89.9 | 74.6 | 57.6 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 14.7 | 14.2 | 13.6 | 12.1 | 9.52 | 6.63 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 35.6 | 36 | 36.2 | 34.7 | 30.6 | 25.6 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 25 | 24.4 | 23.7 | 22.9 | 22.1 | 21.1 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 227 | 241 | 244 | 224 | 186 | 146 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 19.7 | 18.1 | 16.5 | 14.6 | 12.5 | 10.5 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 12.6 | 11.6 | 10.6 | 9.51 | 8.44 | 7.38 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 10.8 | 4.26 | 4.31 | 4.32 | 4.3 | 4.08 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 544 | 505 | 450 | 405 | 367 | 263 |

Table 18: E- scenario - IMPACTS - Jobs

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|--------|
| By economic sector - Agriculture (jobs) | | 537 | 784 | 507 | 1,578 | 1,524 | 1,059 |
| By economic sector - Construction (jobs) | | 23,730 | 37,661 | 43,412 | 43,631 | 49,920 | 64,995 |
| By economic sector - Manufacturing | | 9,713 | 15,723 | 13,939 | 14,028 | 19,893 | 19,167 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 5,448 | 4,183 | 3,287 | 2,439 | 1,985 | 1,265 |
| By economic sector - Other (jobs) | | 2,887 | 5,773 | 7,755 | 8,160 | 10,100 | 14,753 |
| By economic sector - Pipeline (jobs) | | 1,355 | 1,641 | 996 | 895 | 830 | 791 |
| By economic sector - Professional (jobs) | | 10,426 | 15,602 | 18,991 | 21,516 | 24,079 | 30,293 |

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

| Table 10. E- Scellul 10 - IMPAG 13 - Jubs (Cul | шишей | | | | | | |
|--|-------|--------|--------|--------|--------|---------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By economic sector - Trade (jobs) | | 7,455 | 10,486 | 12,749 | 13,675 | 15,739 | 20,995 |
| By economic sector - Utilities (jobs) | | 21,751 | 32,310 | 37,486 | 40,948 | 45,272 | 55,734 |
| By resource sector - Biomass (jobs) | | 2,038 | 2,109 | 1,683 | 6,635 | 6,489 | 4,367 |
| By resource sector - CO2 (jobs) | | 85.2 | 4,760 | 1,526 | 1,873 | 2,823 | 3,799 |
| By resource sector - Coal (jobs) | | 1,089 | 0 | 0 | 0 | 0 | 0 |
| By resource sector - Grid (jobs) | | 26,630 | 36,197 | 48,267 | 53,835 | 70,863 | 94,554 |
| By resource sector - Natural Gas (jobs) | | 16,432 | 13,557 | 11,453 | 12,365 | 6,175 | 5,588 |
| By resource sector - Nuclear (jobs) | | 1,917 | 8,951 | 11,273 | 11,112 | 9,885 | 8,274 |
| By resource sector - Oil (jobs) | | 11,811 | 9,869 | 8,262 | 6,592 | 4,990 | 2,960 |
| By resource sector - Solar (jobs) | | 23,244 | 48,022 | 56,202 | 52,969 | 62,950 | 85,200 |
| By resource sector - Wind (jobs) | | 55.9 | 699 | 458 | 1,489 | 5,167 | 4,308 |
| By education level - All sectors - High | | 35,233 | 52,894 | 58,977 | 62,183 | 72,155 | 89,044 |
| school diploma or less (jobs) | | | , | | | | • |
| By education level - All sectors - | | 26,377 | 39,434 | 44,282 | 46,570 | 53,974 | 67,474 |
| Associates degree or some college (jobs) | | | | ,=== | , | | |
| By education level - All sectors - | | 16,983 | 24,882 | 27,891 | 29,555 | 33,577 | 40,731 |
| Bachelors degree (jobs) | | ., | , | ,- | , | | -, - |
| By education level - All sectors - Masters | | 4,127 | 6,077 | 6,949 | 7,452 | 8,410 | 10,304 |
| or professional degree (jobs) | | , | -,- | | , - | -, | -, |
| By education level - All sectors - Doctoral | | 581 | 876 | 1,024 | 1,110 | 1,226 | 1,497 |
| degree (jobs) | | | | | | , | • |
| Related work experience - All sectors - | | 12,120 | 18,011 | 20,195 | 21,421 | 24,731 | 30,730 |
| None (jobs) | | | | | - | - | • |
| Related work experience - All sectors - Up | | 16,488 | 25,127 | 28,188 | 29,832 | 34,651 | 42,637 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - All sectors - 1 | | 30,052 | 44,491 | 49,883 | 52,672 | 60,603 | 74,829 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - All sectors - 4 | | 19,525 | 28,904 | 32,368 | 34,051 | 39,086 | 48,333 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - | | 5,116 | 7,629 | 8,488 | 8,894 | 10,271 | 12,521 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - None | | 4,521 | 6,847 | 7,750 | 8,159 | 9,353 | 11,536 |
| (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Up to 1 | | 54,355 | 80,914 | 90,444 | 95,880 | 110,758 | 135,754 |
| year (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 1 to 4 | | 17,801 | 26,511 | 29,732 | 31,140 | 35,879 | 44,794 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 4 to 10 | | 5,817 | 8,640 | 9,822 | 10,283 | 11,727 | 14,993 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Over 10 | | 806 | 1,250 | 1,375 | 1,408 | 1,625 | 1,973 |
| years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 13,435 | 20,255 | 22,700 | 23,967 | 27,550 | 33,890 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 49,446 | 73,586 | 82,332 | 87,169 | 100,711 | 123,672 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 13,778 | 20,520 | 23,005 | 24,112 | 27,835 | 34,696 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 5,915 | 8,732 | 9,882 | 10,349 | 11,772 | 14,931 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 726 | 1,070 | 1,203 | 1,273 | 1,475 | 1,861 |
| Over 10 years (jobs) | | | | | | | |
| Wage income - All (million \$2019) | | 4,179 | 6,242 | 7,090 | 7,592 | 8,784 | 10,918 |
| | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|-------|
| Final energy use - Transportation (PJ) | 1,919 | 1,820 | 1,686 | 1,572 | 1,479 | 1,369 | 1,239 |
| Final energy use - Residential (PJ) | 511 | 494 | 487 | 477 | 464 | 448 | 440 |
| Final energy use - Commercial (PJ) | 434 | 438 | 434 | 430 | 423 | 419 | 420 |
| Final energy use - Industry (PJ) | 555 | 584 | 600 | 630 | 661 | 675 | 696 |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Electricity distribution capital invested - | | 6.42 | 5.91 | 9.28 | 9.23 | 14.5 | 15.1 |
| Cumulative 5-yr (billion \$2018) | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Vehicle stocks - LDV – EV (1000 units) | 183 | 600 | 1,016 | 2,946 | 4,875 | 9,145 | 13,415 |
| Vehicle stocks - LDV – All others (1000 units) | 17,536 | 17,536 | 17,536 | 16,634 | 15,732 | 12,123 | 8,514 |
| Light-duty vehicle capital costs vs. REF - Cumulative 5-yr (million \$2018) | | 0 | 553 | 1,131 | 3,850 | 12,021 | 17,546 |
| Public EV charging plugs - DC Fast (1000 units) | 0.717 | | 1.71 | | 8.21 | | 22.6 |
| Public EV charging plugs - L2 (1000 units) | 3.3 | | 41.1 | | 197 | | 543 |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|------|-------|-------|-------|-------|-------|
| Sales of space heating units - Electric | 51.7 | 55.7 | 58.3 | 66.2 | 77.9 | 85.5 | 88.2 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 40 | 39.5 | 37.2 | 30.4 | 20.2 | 13.6 | 11.3 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 7.51 | 3.99 | 3.69 | 2.89 | 1.63 | 0.801 | 0.513 |
| Sales of space heating units - Fossil (%) | 0.822 | 0.81 | 0.749 | 0.558 | 0.266 | 0.083 | 0.021 |
| Sales of water heating units - Electric | 0 | 2.12 | 8.14 | 25.5 | 52.1 | 69.4 | 75.5 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 88.4 | 91.5 | 85.8 | 69.3 | 44.1 | 27.6 | 21.9 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas Furnace | 6.88 | 3.79 | 3.49 | 2.63 | 1.29 | 0.412 | 0.107 |
| (%) | | | | | | | |
| Sales of water heating units - Other (%) | 4.69 | 2.6 | 2.57 | 2.58 | 2.57 | 2.54 | 2.52 |
| Sales of cooking units - Electric | 96 | 96.1 | 96.5 | 97.4 | 98.8 | 99.6 | 99.9 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 4.01 | 3.91 | 3.54 | 2.57 | 1.23 | 0.395 | 0.106 |
| Residential HVAC investment in 2020s vs. | | 16 | 20 | | | | |
| REF - Cumulative 5-yr (billion \$2018) | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|--------|------|------|-------|-------|
| Sales of space heating units - Electric | 23.9 | 18.7 | 23.8 | 38 | 60.4 | 76.6 | 82.8 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 22.7 | 8.23 | 8.33 | 9.11 | 10.8 | 11.9 | 12.5 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 53.5 | 68.6 | 63.8 | 49.8 | 27.3 | 11 | 4.53 |
| Sales of space heating units - Fossil (%) | 0 | 4.41 | 4 | 3.07 | 1.56 | 0.485 | 0.126 |
| Sales of water heating units - Electric | 0.849 | 2.05 | 7.03 | 21.4 | 43.4 | 57.8 | 62.8 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 20.9 | 8.16 | 9.94 | 15.6 | 24.4 | 30 | 32 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas (%) | 69.5 | 85.5 | 78.7 | 59.1 | 28.9 | 9.24 | 2.41 |
| Sales of water heating units - Other (%) | 8.69 | 4.32 | 4.29 | 3.91 | 3.39 | 3 | 2.87 |
| Sales of cooking units - Electric | 32 | 36.2 | 40.9 | 53.4 | 71 | 81.7 | 85.5 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 68 | 63.8 | 59.1 | 46.6 | 29 | 18.3 | 14.5 |
| Commercial HVAC investment in 2020s - | | 66,742 | 74,583 | | | | |
| Cumulative 5-yr (million \$2018) | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|
| Installed thermal - Coal (MW) | 8,052 | 0 | 0 | 0 | 0 | 0 | 0 |
| Installed thermal - Natural gas (MW) | 45,536 | 42,257 | 38,441 | 34,017 | 15,175 | 12,729 | 15,830 |
| Installed thermal - Nuclear (MW) | 3,797 | 3,797 | 6,718 | 10,073 | 12,747 | 14,414 | 14,294 |

Table 25: E- scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------------|------|------|------|------|---------|
| Carbon sink potential - Low - Accelerate | | | | | | | -665 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Avoid | | | | | | | -654 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Extend | | | | | | | -2,380 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Improve | | | | | | | -1,929 |
| plantations (1000 tCO2e/y) | | | | | | | -, |
| Carbon sink potential - Low - Increase | | | | | | | -3,101 |
| retention of HWP (1000 tCO2e/y) | | | | | | | 57.5. |
| Carbon sink potential - Low - Increase | | | | | | | -344 |
| trees outside forests (1000 tC02e/y) | | | | | | | 011 |
| Carbon sink potential - Low - Reforest | | | | | | | -231 |
| cropland (1000 tCO2e/y) | | | | | | | 201 |
| Carbon sink potential - Low - Reforest | | | | | | | -613 |
| pasture (1000 tC02e/y) | | | | | | | -013 |
| Carbon sink potential - Low - Restore | | | | | | | -1,612 |
| | | | | | | | -1,012 |
| productivity (1000 tC02e/y) | | | | | | | 11 500 |
| Carbon sink potential - Low - All (not | | | | | | | -11,529 |
| counting overlap) (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Accelerate | | | | | | | -997 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Avoid | | | | | | | -2,289 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Extend | | | | | | | -4,287 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Improve | | | | | | | -2,827 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | -6,203 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | -664 |
| trees outside forests (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -346 |
| cropland (1000 tCO2e/y) | | | | | | | 0-10 |
| Carbon sink potential - Mid - Reforest | | | | | | | -4,354 |
| pasture (1000 tCO2e/y) | | | | | | | -4,554 |
| Carbon sink potential - Mid - Restore | | | | | | | -3,196 |
| • | | | | | | | -3,190 |
| productivity (1000 tC02e/y) | | | | | | | 05.170 |
| Carbon sink potential - Mid - All (not | | | | | | | -25,162 |
| counting overlap) (1000 tCO2e/y) | | | | | | | 1 000 |
| Carbon sink potential - High - Accelerate | | | | | | | -1,328 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Avoid | | | | | | | -3,923 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Extend | | | | | | | -6,195 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Improve | | | | | | | -3,791 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | -9,304 |
| retention of HWP (1000 tCO2e/y) | | | | | | | • |
| Carbon sink potential - High - Increase | | | | | | | -983 |
| trees outside forests (1000 tC02e/y) | | | | | | | . 30 |
| Carbon sink potential - High - Reforest | | | | | | | -462 |
| cropland (1000 tCO2e/y) | | | | | | | -32 |
| 01 0p10110 (1000 t0020/ y) | | | | | | | |

Table 25: E- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item Carbon sink potential - High - Reforest | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 -8,095 |
|---|------|------|------|------|------|------|----------------|
| pasture (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | -38,862 |
| Carbon sink potential - High - Restore productivity (1000 tC02e/y) | | | | | | | -4,781 |
| Land impacted for carbon sink potential - Low - Accelerate regeneration (1000 | | | | | | | 109 |
| hectares) Land impacted for carbon sink potential - | | | | | | | 499 |
| Low - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - Low - Extend rotation length (1000 hectares) | | | | | | | 1,210 |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 hectares) | | | | | | | 698 |
| 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 (1000 hectares) | | | | | | | 49.2 |
| Land impacted for carbon sink potential - Low - Reforest cropland (1000 hectares) | | | | | | | 15.3 |
| Land impacted for carbon sink potential - Low - Reforest pasture (1000 hectares) | | | | | | | 39.9 |
| Land impacted for carbon sink potential - Low - Restore productivity (1000 hectares) | | | | | | | 959 |
| Land impacted for carbon sink potential - Low - Total impacted (over 30 years) (1000 hectares) | | | | | | | 3,579 |
| Land impacted for carbon sink potential - Mid - Accelerate regeneration (1000 | | | | | | | 163 |
| hectares) Land impacted for carbon sink potential - Mid - Avoid deforestation (over 30 years) (1000 hectares) | | | | | | | 515 |
| Land impacted for carbon sink potential - Mid - Extend rotation length (1000 hectares) | | | | | | | 2,185 |
| Land impacted for carbon sink potential - Mid - Improve plantations (1000 hectares) | | | | | | | 1,051 |
| Land impacted for carbon sink potential - Mid - Increase retention of HWP (1000 hectares) | | | | | | | 0 |
| Land impacted for carbon sink potential - Mid - Increase trees outside forests (1000 hectares) | | | | | | | 71.3 |
| Land impacted for carbon sink potential - Mid - Reforest cropland (1000 hectares) | | | | | | | 22.9 |
| Land impacted for carbon sink potential - Mid - Reforest pasture (1000 hectares) | | | | | | | 288 |
| Land impacted for carbon sink potential - Mid - Restore productivity (1000 | | | | | | | 1,931 |
| hectares) Land impacted for carbon sink potential - Mid - Total impacted (over 30 years) (1000 | | | | | | | 6,227 |

Table 25: E- scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|-------|
| Land impacted for carbon sink potential - | | | | | | | 217 |
| High - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 531 |
| High - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,159 |
| High - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,397 |
| 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 - | | | | | | | 93.4 |
| High - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 30.5 |
| High - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 230 |
| High - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,585 |
| High - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 7,243 |
| High - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |

Table 26: E- scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|--------|
| Carbon sink potential - Moderate | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,066 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -14.8 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,081 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,077 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -29.6 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,107 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 559 |
| deployment - Cropland measures (1000 | | | | | | | |
| hectares) | | | | | | | |

Table 26: E- scenario - PILLAR 6: Land sinks - Agriculture (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|-------|
| Land impacted for carbon sink - Moderate | | | | | | | 26.9 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 586 |
| deployment - Total (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 0 |
| Aggressive deployment - Corn-ethanol to | | | | | | | |
| energy grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 1,091 |
| Aggressive deployment - Cropland | | | | | | | |
| measures (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 53.8 |
| Aggressive deployment - Permanent | | | | | | | |
| conservation cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 1,144 |
| Aggressive deployment - Total (1000 | | | | | | | |
| hectares) | | | | | | | |

Table 27: E+RE+ scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|-------|-------|-------|-------|-------|
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | | 59.2 | 0.262 | 0.193 | 0.088 | 0.042 | 0.002 |
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | | 83.4 | 72.5 | 52.9 | 32.5 | 6.61 | 2.8 |
| Premature deaths from air pollution - Mobile - On-Road (deaths) | | 655 | 621 | 479 | 281 | 129 | 49.3 |
| Premature deaths from air pollution - Gas Stations (deaths) | | 53 | 49.2 | 37.4 | 22.2 | 10.5 | 4.55 |
| Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | | 13.4 | 11.2 | 8.21 | 5.44 | 3.62 | 2.58 |
| Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | | 1.63 | 1.34 | 0.939 | 0.57 | 0.28 | 0.122 |
| Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | | 3.96 | 3.68 | 3.09 | 2.37 | 1.67 | 1.14 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 2.82 | 2.76 | 2.68 | 2.59 | 2.5 | 2.39 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 25.4 | 23.5 | 18.4 | 12.8 | 9.16 | 7.27 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 2.22 | 1.87 | 1.48 | 1.1 | 0.792 | 0.533 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 1.42 | 1.22 | 1.02 | 0.813 | 0.609 | 0.409 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 1.4 | 0.481 | 0.48 | 0.475 | 0.485 | 0.428 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 60.4 | 58.1 | 51.5 | 38 | 23.9 | 3.7 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 524 | 2.32 | 1.71 | 0.784 | 0.369 | 0.022 |

Table 27: E+RE+ scenario - IMPACTS - Health (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|-------|-------|------|
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 739 | 642 | 469 | 288 | 58.6 | 24.8 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 5,828 | 5,517 | 4,260 | 2,502 | 1,148 | 438 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 469 | 436 | 331 | 197 | 93.2 | 40.3 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 119 | 99.6 | 72.7 | 48.2 | 32.1 | 22.9 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 14.5 | 11.9 | 8.32 | 5.05 | 2.48 | 1.08 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 35.1 | 32.6 | 27.4 | 21 | 14.8 | 10.1 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 25 | 24.4 | 23.7 | 22.9 | 22.1 | 21.1 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 225 | 208 | 163 | 114 | 81.1 | 64.4 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 19.7 | 16.5 | 13.1 | 9.77 | 7.01 | 4.71 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 12.6 | 10.8 | 9.02 | 7.2 | 5.39 | 3.62 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 12.4 | 4.24 | 4.24 | 4.19 | 4.28 | 3.77 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 536 | 516 | 457 | 337 | 212 | 32.9 |

Table 28: E+RE+ scenario - IMPACTS - Jobs

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|---------|
| By economic sector - Agriculture (jobs) | | 444 | 921 | 460 | 932 | 1,005 | 1,044 |
| By economic sector - Construction (jobs) | | 17,801 | 38,469 | 60,731 | 49,792 | 37,333 | 116,514 |
| By economic sector - Manufacturing | | 11,014 | 15,160 | 22,744 | 18,748 | 17,731 | 33,219 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 5,293 | 3,722 | 2,261 | 1,194 | 494 | 92.1 |
| By economic sector - Other (jobs) | | 1,790 | 6,493 | 11,916 | 9,753 | 7,077 | 30,476 |
| By economic sector - Pipeline (jobs) | | 1,313 | 1,088 | 754 | 476 | 252 | 115 |
| By economic sector - Professional (jobs) | | 8,330 | 15,760 | 24,455 | 21,632 | 16,700 | 54,238 |
| By economic sector - Trade (jobs) | | 6,101 | 10,730 | 16,720 | 14,297 | 10,796 | 39,132 |
| By economic sector - Utilities (jobs) | | 19,976 | 24,499 | 37,000 | 38,498 | 33,889 | 76,329 |
| By resource sector - Biomass (jobs) | | 1,726 | 2,598 | 1,239 | 3,042 | 3,734 | 4,594 |
| By resource sector - CO2 (jobs) | | 0 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| By resource sector - Coal (jobs) | | 1,089 | 0 | 0 | 0 | 0 | 0 |
| By resource sector - Grid (jobs) | | 22,656 | 35,954 | 63,454 | 67,199 | 65,277 | 147,197 |
| By resource sector - Natural Gas (jobs) | | 16,748 | 12,840 | 10,670 | 10,794 | 4,265 | 9,188 |
| By resource sector - Nuclear (jobs) | | 1,917 | 1,886 | 1,527 | 1,039 | 813 | 297 |
| By resource sector - Oil (jobs) | | 11,676 | 9,068 | 6,215 | 3,616 | 1,549 | 41.3 |
| By resource sector - Solar (jobs) | | 16,200 | 53,590 | 91,633 | 64,990 | 42,654 | 186,383 |
| By resource sector - Wind (jobs) | | 48.8 | 905 | 2,303 | 4,641 | 6,985 | 3,459 |
| By education level - All sectors - High | | 30,239 | 50,446 | 76,557 | 66,840 | 54,057 | 150,207 |
| school diploma or less (jobs) | | | | | | | |

Table 28: E+RE+ scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|---------|---------|--------|---------|
| By education level - All sectors - | | 22,782 | 37,244 | 57,212 | 50,334 | 40,546 | 114,394 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - All sectors - | | 14,970 | 22,772 | 33,755 | 29,720 | 23,949 | 67,015 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - All sectors - Masters | | 3,584 | 5,560 | 8,296 | 7,372 | 5,912 | 17,002 |
| or professional degree (jobs) | | | | | | | |
| By education level - All sectors - Doctoral | | 485 | 820 | 1,223 | 1,057 | 813 | 2,541 |
| degree (jobs) | | | | | | | |
| Related work experience - All sectors - | | 10,452 | 17,034 | 25,892 | 22,831 | 18,422 | 51,837 |
| None (jobs) | | | | | | | |
| Related work experience - All sectors - Up | | 14,085 | 24,034 | 36,652 | 31,820 | 25,673 | 72,491 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - All sectors - 1 | | 26,080 | 41,712 | 62,992 | 55,427 | 44,718 | 125,262 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - All sectors - 4 | | 16,937 | 27,015 | 40,884 | 35,927 | 28,887 | 80,862 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - | | 4,507 | 7,047 | 10,622 | 9,317 | 7,578 | 20,707 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - None | | 3,864 | 6,438 | 9,765 | 8,433 | 6,705 | 19,561 |
| (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Up to 1 | | 47,332 | 76,069 | 114,738 | 100,794 | 81,741 | 227,427 |
| year (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 1 to 4 | | 15,325 | 24,912 | 38,036 | 33,427 | 26,849 | 75,293 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 4 to 10 | | 4,845 | 8,241 | 12,710 | 11,162 | 8,795 | 25,511 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Over 10 | | 694 | 1,182 | 1,793 | 1,505 | 1,187 | 3,367 |
| years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 11,592 | 19,067 | 28,888 | 25,150 | 20,137 | 57,316 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 43,006 | 69,156 | 104,441 | 91,769 | 74,407 | 207,101 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 11,869 | 19,327 | 29,488 | 25,894 | 20,835 | 58,365 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 4,970 | 8,272 | 12,651 | 11,110 | 8,769 | 25,220 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 623 | 1,020 | 1,574 | 1,400 | 1,129 | 3,157 |
| Over 10 years (jobs) | | | | | | | |
| Wage income - All (million \$2019) | | 3,644 | 5,757 | 8,717 | 7,798 | 6,381 | 17,928 |

Table 29: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Overview

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|------|
| Final energy use - Transportation (PJ) | 1,917 | 1,804 | 1,617 | 1,384 | 1,172 | 1,037 | 974 |
| Final energy use - Residential (PJ) | 511 | 493 | 475 | 450 | 430 | 422 | 425 |
| Final energy use - Commercial (PJ) | 434 | 437 | 427 | 413 | 402 | 400 | 406 |
| Final energy use - Industry (PJ) | 555 | 584 | 599 | 624 | 651 | 665 | 684 |

Table 30: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Electricity distribution capital invested - | | 7.9 | 7.56 | 13.5 | 13.9 | 16.3 | 17 |
| Cumulative 5-yr (billion \$2018) | | | | | | | |

Table 31: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Transportation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|--------|--------|--------|--------|--------|--------|--------|
| Vehicle stocks - LDV – EV (1000 units) | 237 | 1,656 | 3,074 | 8,041 | 13,008 | 16,976 | 20,945 |
| Vehicle stocks - LDV - All others (1000 | 17,465 | 16,630 | 15,795 | 11,510 | 7,226 | 4,088 | 950 |
| _units) | | | | | | | |

Table 31: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Transportation (continued)

| | | • | | | | | |
|--|-------|-------|-------|--------|--------|--------|--------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Light-duty vehicle capital costs vs. REF - | | 3,333 | 8,621 | 13,843 | 21,020 | 22,822 | 21,789 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Public EV charging plugs - DC Fast (1000 | 0.717 | | 5.18 | | 21.9 | | 35.3 |
| units) | | | | | | | |
| Public EV charging plugs - L2 (1000 units) | 3.3 | | 124 | | 526 | | 848 |

Table 32: E+RE+ scenario - PILLAR 1: Efficiency/Electrification - Residential

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|------|-------|-------|-------|-------|-------|
| Sales of space heating units - Electric | 51.7 | 60.3 | 83.9 | 89.2 | 89.3 | 89.1 | 89 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 40 | 35.5 | 15 | 10.4 | 10.3 | 10.5 | 10.6 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 7.51 | 3.51 | 0.99 | 0.435 | 0.414 | 0.413 | 0.412 |
| Sales of space heating units - Fossil (%) | 0.822 | 0.7 | 0.133 | 0.006 | 0 | 0 | 0 |
| Sales of water heating units - Electric | 0 | 12.3 | 65.2 | 77 | 77.6 | 77.6 | 77.6 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 88.4 | 81.8 | 31.6 | 20.4 | 19.9 | 19.9 | 19.9 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas Furnace | 6.88 | 3.27 | 0.619 | 0.026 | 0 | 0 | 0 |
| (%) | | | | | | | |
| Sales of water heating units - Other (%) | 4.69 | 2.6 | 2.57 | 2.58 | 2.57 | 2.54 | 2.53 |
| Sales of cooking units - Electric | 96 | 96.9 | 99.5 | 100 | 100 | 100 | 100 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 3.99 | 3.14 | 0.538 | 0.027 | 0 | 0 | 0 |
| Residential HVAC investment in 2020s vs. | | 16.2 | 21.3 | | | | |
| REF - Cumulative 5-yr (billion \$2018) | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|--------|-------|------|------|------|
| Sales of space heating units - Electric | 23.9 | 27 | 70.6 | 83.8 | 84.8 | 85 | 85.1 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 22.7 | 8.53 | 10.3 | 12.4 | 13.2 | 13 | 12.8 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 53.5 | 60.7 | 18.4 | 3.73 | 1.99 | 2 | 2.02 |
| Sales of space heating units - Fossil (%) | 0 | 3.82 | 0.711 | 0.031 | 0 | 0 | 0 |
| Sales of water heating units - Electric | 0.849 | 10.5 | 54.3 | 64 | 64.4 | 64.5 | 64.5 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 20.9 | 11.5 | 28.7 | 32.5 | 32.7 | 32.7 | 32.7 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas (%) | 69.5 | 73.9 | 14 | 0.589 | 0 | 0 | 0 |
| Sales of water heating units - Other (%) | 8.69 | 4.13 | 3.09 | 2.85 | 2.86 | 2.83 | 2.82 |
| Sales of cooking units - Electric | 32 | 46 | 79.9 | 86.5 | 86.9 | 86.9 | 86.9 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 68 | 54 | 20.1 | 13.5 | 13.1 | 13.1 | 13.1 |
| Commercial HVAC investment in 2020s - | | 66,758 | 74,510 | | | | |
| Cumulative 5-yr (million \$2018) | | | | | | | |

Table 34: E+RE+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|---------|---------|---------|
| Installed thermal - Coal (MW) | 8,052 | 0 | 0 | 0 | 0 | 0 | 0 |
| Installed thermal - Natural gas (MW) | 45,536 | 39,522 | 40,432 | 36,849 | 18,740 | 19,630 | 34,273 |
| Installed thermal - Nuclear (MW) | 3,797 | 3,797 | 3,797 | 2,160 | 2,160 | 1,080 | 0 |
| Installed renewables - Rooftop PV (MW) | 723 | 1,179 | 1,661 | 2,333 | 3,256 | 4,426 | 5,903 |
| Installed renewables - Solar - Base land use assumptions (MW) | 2,649 | 6,453 | 34,939 | 88,909 | 111,574 | 111,574 | 258,378 |
| Installed renewables - Offshore Wind - Base land use assumptions (MW) | 0 | 93.8 | 93.8 | 801 | 5,502 | 9,350 | 13,530 |

Table 34: E+RE+ scenario - PILLAR 2: Clean Electricity - Generating capacity (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|-------|--------|--------|---------|---------|---------|
| Installed renewables - Solar - | 2,651 | 7,449 | 42,401 | 96,442 | 111,688 | 111,688 | 263,909 |
| Constrained land use assumptions (MW) | | | | | | | |
| Installed renewables - Wind - Constrained | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| land use assumptions (MW) | | | | | | | |
| Installed renewables - Offshore Wind - | 0 | 0 | 0 | 0 | 0 | 0 | 9,078 |
| Constrained land use assumptions (MW) | | | | | | | |
| Capital invested - Solar PV - Base (billion | | 5.09 | 34.1 | 59.5 | 23.6 | 0 | 136 |
| \$2018) | | | | | | | |
| Capital invested - Offshore Wind - Base | | 0.266 | 0 | 1.45 | 8.16 | 5.68 | 5.24 |
| (billion \$2018) | | | | | | | |

Table 35: E+RE+ scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|---------|---------|---------|---------|-----------|
| Solar - Base land use assumptions (GWh) | 6,248 | 14,014 | 71,600 | 179,721 | 224,672 | 224,672 | 522,445 |
| Wind - Base land use assumptions (GWh) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OffshoreWind - Base land use | 0 | 285 | 285 | 2,430 | 16,673 | 28,401 | 41,096 |
| assumptions (GWh) | | | | | | | |
| Solar - Constrained land use assumptions | 12,496 | 32,171 | 173,230 | 389,409 | 449,632 | 449,632 | 1,066,188 |
| (GWh) | | | | | | | |
| Wind - Constrained land use assumptions | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| (GWh) | | | | | | | |
| OffshoreWind - Constrained land use | 0 | 0 | 0 | 0 | 0 | 0 | 55,174 |
| assumptions (GWh) | | | | | | | |

Table 36: E+RE+ scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -665 |
| Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) | | | | | | | -654 |
| Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) | | | | | | | -2,380 |
| Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) | | | | | | | -1,929 |
| Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) | | | | | | | -3,101 |
| Carbon sink potential - Low - Increase trees outside forests (1000 tC02e/y) | | | | | | | -344 |
| Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) | | | | | | | -231 |
| Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) | | | | | | | -613 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) | | | | | | | -1,612 |
| Carbon sink potential - Low - All (not counting overlap) (1000 tC02e/y) | | | | | | | -11,529 |
| Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) | | | | | | | -997 |
| Carbon sink potential - Mid - Avoid deforestation (1000 tC02e/y) | | | | | | | -2,289 |
| Carbon sink potential - Mid - Extend rotation length (1000 tC02e/y) | | | | | | | -4,287 |
| Carbon sink potential - Mid - Improve plantations (1000 tC02e/y) | | | | | | | -2,827 |
| Carbon sink potential - Mid - Increase retention of HWP (1000 tC02e/y) | | | | | | | -6,203 |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tC02e/y) | | | | | | | -664 |

Table 36: E+RE+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item Proposition No. 1 Professional Profession No. 1 Prof | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Carbon sink potential - Mid - Reforest | | | | | | | -346 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -4,354 |
| pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore | | | | | | | -3,196 |
| productivity (1000 tC02e/y) | | | | | | | -3,190 |
| Carbon sink potential - Mid - All (not | | + | | | | | -25,162 |
| counting overlap) (1000 tCO2e/y) | | | | | | | -20,102 |
| Carbon sink potential - High - Accelerate | | + | | + | | | -1,328 |
| regeneration (1000 tCO2e/y) | | | | | | | 1,020 |
| Carbon sink potential - High - Avoid | | | | | | | -3,923 |
| deforestation (1000 tCO2e/y) | | | | | | | 0,720 |
| Carbon sink potential - High - Extend | | | | | | | -6,195 |
| rotation length (1000 tCO2e/y) | | | | | | | • |
| Carbon sink potential - High - Improve | | | | | | | -3,791 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | -9,304 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | -983 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -462 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -8,095 |
| pasture (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - All (not | | | | | | | -38,862 |
| counting overlap) (1000 tC02e/y) | | | | | | | / 701 |
| Carbon sink potential - High - Restore | | | | | | | -4,781 |
| productivity (1000 tCO2e/y) Land impacted for carbon sink potential - | | | | | | | 109 |
| Low - Accelerate regeneration (1000 | | | | | | | 109 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | + | | | | | 499 |
| Low - Avoid deforestation (over 30 years) | | | | | | | 777 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,210 |
| Low - Extend rotation length (1000 | | | | | | | ., |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 698 |
| 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 - | | | | | | | 49.2 |
| Low - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 15.3 |
| Low - Reforest cropland (1000 hectares) | | | | | | | 00.0 |
| Land impacted for carbon sink potential - | | | | | | | 39.9 |
| Low - Reforest pasture (1000 hectares) | | | | | | | 959 |
| Land impacted for carbon sink potential - | | | | | | | 959 |
| Low - Restore productivity (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,579 |
| Land impacted for carbon sink potential - Low - Total impacted (over 30 years) | | | | | | | 3,519 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 163 |
| Mid - Accelerate regeneration (1000 | | | | | | | 103 |
| hectares) | | | | | | | |

Table 36: E+RE+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|-------|
| Land impacted for carbon sink potential - | | | | | | | 515 |
| Mid - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 2,185 |
| Mid - Extend rotation length (1000 | | | | | | | • |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,051 |
| 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 - | | | | | | | 71.3 |
| Mid - Increase trees outside forests (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 22.9 |
| Mid - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 288 |
| Mid - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,931 |
| Mid - Restore productivity (1000 | | | | | | | ., |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 6,227 |
| Mid - Total impacted (over 30 years) (1000 | | | | | | | -, |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 217 |
| High - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 531 |
| High - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,159 |
| High - Extend rotation length (1000 | | | | | | | -, - |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,397 |
| 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 - | | | | | | | 93.4 |
| High - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 30.5 |
| High - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 230 |
| High - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,585 |
| High - Restore productivity (1000 | | | | | | | • |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 7,243 |
| High - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |

Table 37: E+RE+ scenario - PILLAR 6: Land sinks - Agriculture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Carbon sink potential - Moderate deployment - Corn-ethanol to energy | | | | | | | 0 |
| grasses (1000 tCO2e/y) | | | | | | | |

Table 37: E+RE+ scenario - PILLAR 6: Land sinks - Agriculture (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|--------|
| Carbon sink potential - Moderate | | | | | | | -1,066 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | 1/ 0 |
| Carbon sink potential - Moderate | | | | | | | -14.8 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,081 |
| deployment - Total (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,077 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -29.6 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,107 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 559 |
| deployment - Cropland measures (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 26.9 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 586 |
| deployment - Total (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 0 |
| Aggressive deployment - Corn-ethanol to | | | | | | | |
| energy grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 1,091 |
| Aggressive deployment - Cropland | | | | | | | |
| measures (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 53.8 |
| Aggressive deployment - Permanent | | | | | | | |
| conservation cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 1,144 |
| Aggressive deployment - Total (1000 | | | | | | | • |
| hectares) | | | | | | | |

Table 38: E+RE- scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|-------|-------|-------|-------|-------|
| Premature deaths from air pollution - | | 59.2 | 0.262 | 0.193 | 0.088 | 0.042 | 0.002 |
| Fuel Comb - Electric Generation - Coal | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 82.6 | 79.6 | 60.5 | 54.3 | 24.6 | 3.65 |
| Fuel Comb - Electric Generation - Natural | | | | | | | |
| Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 655 | 621 | 479 | 281 | 129 | 49.3 |
| Mobile - On-Road (deaths) | | | | | | | |
| Premature deaths from air pollution - Gas | | 53 | 49.2 | 37.4 | 22.2 | 10.5 | 4.55 |
| Stations (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 13.4 | 11.2 | 8.21 | 5.44 | 3.62 | 2.58 |
| Fuel Comb - Residential - Natural Gas | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1.63 | 1.34 | 0.939 | 0.57 | 0.28 | 0.122 |
| Fuel Comb - Residential - Oil (deaths) | | | | | | | |

Table 38: E+RE- scenario - IMPACTS - Health (continued)

| Table 38: E+RE- scenario - IMPACTS - Healt | ın (continu | • | | | | | |
|--|-------------|-------|-------|-------|-------|-------|-------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Premature deaths from air pollution - | | 3.96 | 3.68 | 3.09 | 2.37 | 1.67 | 1.14 |
| Fuel Comb - Residential - Other (deaths) | | | | | | | |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 2.82 | 2.76 | 2.68 | 2.59 | 2.5 | 2.39 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 25.4 | 23.5 | 18.4 | 12.8 | 9.16 | 7.27 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 2.22 | 1.87 | 1.48 | 1.1 | 0.792 | 0.533 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 1.42 | 1.22 | 1.02 | 0.813 | 0.609 | 0.409 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 1.14 | 0.479 | 0.48 | 0.475 | 0.487 | 0.428 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 62.1 | 61.4 | 61.5 | 53.1 | 45.4 | 34.5 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 524 | 2.32 | 1.71 | 0.784 | 0.369 | 0.022 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 732 | 705 | 536 | 481 | 218 | 32.4 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 5,828 | 5,517 | 4,260 | 2,502 | 1,148 | 438 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 469 | 436 | 331 | 197 | 93.2 | 40.3 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 119 | 99.6 | 72.7 | 48.2 | 32.1 | 22.9 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 14.5 | 11.9 | 8.32 | 5.05 | 2.48 | 1.08 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 35.1 | 32.6 | 27.4 | 21 | 14.8 | 10.1 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 25 | 24.4 | 23.7 | 22.9 | 22.1 | 21.1 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 225 | 208 | 163 | 114 | 81.1 | 64.4 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 19.7 | 16.5 | 13.1 | 9.77 | 7.01 | 4.71 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 12.6 | 10.8 | 9.02 | 7.2 | 5.39 | 3.62 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 10.1 | 4.23 | 4.24 | 4.19 | 4.29 | 3.77 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 552 | 545 | 546 | 472 | 403 | 306 |

Table 39: E+RE- scenario - IMPACTS - Jobs

| Table 39: E+RE- scenario - IMPACIS - Jobs | | | | | | | |
|--|------|--------|--------|--------|--------|--------|--------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By economic sector - Agriculture (jobs) | | 504 | 825 | 490 | 1,328 | 1,282 | 1,068 |
| By economic sector - Construction (jobs) | | 22,135 | 29,008 | 22,323 | 22,686 | 24,150 | 26,444 |
| By economic sector - Manufacturing (jobs) | | 8,182 | 9,105 | 8,353 | 7,922 | 8,568 | 7,374 |
| By economic sector - Mining (jobs) | | 5,491 | 4,220 | 3,209 | 2,212 | 1,781 | 1,262 |
| By economic sector - Other (jobs) | | 2,613 | 3,732 | 2,566 | 2,696 | 2,980 | 3,763 |
| By economic sector - Pipeline (jobs) | | 1,386 | 1,807 | 1,187 | 1,077 | 967 | 975 |
| By economic sector - Professional (jobs) | | 9,753 | 13,187 | 11,098 | 12,510 | 14,193 | 16,995 |
| By economic sector - Trade (jobs) | | 7,054 | 8,406 | 6,753 | 6,916 | 7,517 | 8,857 |
| By economic sector - Utilities (jobs) | | 20,999 | 35,686 | 35,935 | 38,269 | 47,995 | 63,340 |
| By resource sector - Biomass (jobs) | | 1,766 | 2,116 | 1,678 | 4,966 | 5,022 | 4,439 |
| By resource sector - CO2 (jobs) | | 86.4 | 5,388 | 1,739 | 2,103 | 3,171 | 4,284 |
| By resource sector - Coal (jobs) | | 1,211 | 174 | 165 | 157 | 149 | 57.3 |
| By resource sector - Grid (jobs) | | 24,010 | 30,372 | 36,140 | 38,508 | 43,089 | 42,018 |
| By resource sector - Natural Gas (jobs) | | 17,491 | 17,647 | 12,956 | 13,213 | 11,894 | 11,854 |
| By resource sector - Nuclear (jobs) | | 1,917 | 14,416 | 16,882 | 17,675 | 27,766 | 47,501 |
| By resource sector - Oil (jobs) | | 11,671 | 9,194 | 6,499 | 4,263 | 2,825 | 1,910 |
| By resource sector - Solar (jobs) | | 19,753 | 26,409 | 15,828 | 14,655 | 15,317 | 17,931 |
| By resource sector - Wind (jobs) | | 213 | 261 | 25.3 | 75.4 | 201 | 85.5 |
| By education level - All sectors - High | | 32,928 | 44,146 | 37,861 | 39,489 | 44,563 | 51,693 |
| school diploma or less (jobs) | | | | | | | |
| By education level - All sectors - | | 24,749 | 33,452 | 28,845 | 29,886 | 33,968 | 39,860 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - All sectors - | | 15,995 | 22,097 | 19,612 | 20,349 | 23,905 | 29,698 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - All sectors - Masters or professional degree (jobs) | | 3,897 | 5,495 | 4,910 | 5,159 | 6,112 | 7,699 |
| By education level - All sectors - Doctoral | | 548 | 786 | 685 | 732 | 873 | 1,129 |
| degree (jobs) | | | | | | | |
| Related work experience - All sectors - | | 11,376 | 15,333 | 13,206 | 13,801 | 15,646 | 18,331 |
| None (jobs) | | | | | | | |
| Related work experience - All sectors - Up | | 15,352 | 20,822 | 17,881 | 18,750 | 21,365 | 25,179 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - All sectors - 1 | | 28,235 | 38,283 | 33,322 | 34,613 | 39,678 | 47,341 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - All sectors - 4 | | 18,361 | 24,950 | 21,675 | 22,445 | 25,748 | 30,761 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - | | 4,793 | 6,589 | 5,828 | 6,006 | 6,985 | 8,468 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - None | | 4,234 | 5,842 | 5,056 | 5,252 | 6,106 | 7,505 |
| (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Up to 1 | | 50,887 | 68,955 | 60,115 | 62,710 | 71,927 | 85,645 |
| year (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 1 to 4 | | 16,743 | 22,727 | 19,621 | 20,280 | 23,107 | 27,282 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 4 to 10 | | 5,503 | 7,423 | 6,252 | 6,491 | 7,264 | 8,415 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Over 10 | | 750 | 1,028 | 868 | 883 | 1,018 | 1,233 |
| years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 12,581 | 17,240 | 14,872 | 15,504 | 17,859 | 21,532 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 46,309 | 62,762 | 54,740 | 57,031 | 65,404 | 77,856 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 12,945 | 17,513 | 15,125 | 15,638 | 17,797 | 20,962 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 5,599 | 7,556 | 6,402 | 6,636 | 7,463 | 8,717 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 683 | 906 | 774 | 806 | 897 | 1,013 |
| Over 10 years (jobs) | | | | | | | |
| Wage income - All (million \$2019) | | 3,937 | 5,499 | 4,922 | 5,193 | 6,147 | 7,662 |
| · · · · · · · · · · · · · · · · · · · | | | | | · | · | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|------|
| Final energy use - Transportation (PJ) | 1,917 | 1,804 | 1,617 | 1,384 | 1,172 | 1,037 | 974 |
| Final energy use - Residential (PJ) | 511 | 493 | 475 | 450 | 430 | 422 | 425 |
| Final energy use - Commercial (PJ) | 434 | 437 | 427 | 413 | 402 | 400 | 406 |
| Final energy use - Industry (PJ) | 555 | 584 | 599 | 624 | 651 | 665 | 684 |

Table 41: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Electricity distribution capital invested - | | 7.9 | 7.56 | 13.5 | 13.9 | 16.3 | 17 |
| Cumulative 5-yr (billion \$2018) | | | | | | | |

Table 42: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Transportation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Vehicle stocks - LDV – EV (1000 units) | 237 | 1,656 | 3,074 | 8,041 | 13,008 | 16,976 | 20,945 |
| Vehicle stocks - LDV – All others (1000 units) | 17,465 | 16,630 | 15,795 | 11,510 | 7,226 | 4,088 | 950 |
| Light-duty vehicle capital costs vs. REF - Cumulative 5-yr (million \$2018) | | 3,333 | 8,621 | 13,843 | 21,020 | 22,822 | 21,789 |
| Public EV charging plugs - DC Fast (1000 units) | 0.717 | | 5.18 | | 21.9 | | 35.3 |
| Public EV charging plugs - L2 (1000 units) | 3.3 | | 124 | | 526 | | 848 |

Table 43: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Residential

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|------|-------|-------|-------|-------|-------|
| Sales of space heating units - Electric | 51.7 | 60.3 | 83.9 | 89.2 | 89.3 | 89.1 | 89 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 40 | 35.5 | 15 | 10.4 | 10.3 | 10.5 | 10.6 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 7.51 | 3.51 | 0.99 | 0.435 | 0.414 | 0.413 | 0.412 |
| Sales of space heating units - Fossil (%) | 0.822 | 0.7 | 0.133 | 0.006 | 0 | 0 | 0 |
| Sales of water heating units - Electric | 0 | 12.3 | 65.2 | 77 | 77.6 | 77.6 | 77.6 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 88.4 | 81.8 | 31.6 | 20.4 | 19.9 | 19.9 | 19.9 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas Furnace | 6.88 | 3.27 | 0.619 | 0.026 | 0 | 0 | 0 |
| (%) | | | | | | | |
| Sales of water heating units - Other (%) | 4.69 | 2.6 | 2.57 | 2.58 | 2.57 | 2.54 | 2.53 |
| Sales of cooking units - Electric | 96 | 96.9 | 99.5 | 100 | 100 | 100 | 100 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 3.99 | 3.14 | 0.538 | 0.027 | 0 | 0 | 0 |
| Residential HVAC investment in 2020s vs. | | 16.2 | 21.3 | | | | |
| REF - Cumulative 5-yr (billion \$2018) | | | | | | | |

Table 44: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|------|-------|-------|------|------|------|
| Sales of space heating units - Electric | 23.9 | 27 | 70.6 | 83.8 | 84.8 | 85 | 85.1 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 22.7 | 8.53 | 10.3 | 12.4 | 13.2 | 13 | 12.8 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 53.5 | 60.7 | 18.4 | 3.73 | 1.99 | 2 | 2.02 |
| Sales of space heating units - Fossil (%) | 0 | 3.82 | 0.711 | 0.031 | 0 | 0 | 0 |
| Sales of water heating units - Electric | 0.849 | 10.5 | 54.3 | 64 | 64.4 | 64.5 | 64.5 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 20.9 | 11.5 | 28.7 | 32.5 | 32.7 | 32.7 | 32.7 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas (%) | 69.5 | 73.9 | 14 | 0.589 | 0 | 0 | 0 |
| Sales of water heating units - Other (%) | 8.69 | 4.13 | 3.09 | 2.85 | 2.86 | 2.83 | 2.82 |

Table 44: E+RE- scenario - PILLAR 1: Efficiency/Electrification - Commercial (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|--------|--------|------|------|------|------|
| Sales of cooking units - Electric | 32 | 46 | 79.9 | 86.5 | 86.9 | 86.9 | 86.9 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 68 | 54 | 20.1 | 13.5 | 13.1 | 13.1 | 13.1 |
| Commercial HVAC investment in 2020s - | | 66,758 | 74,510 | | | | |
| Cumulative 5-yr (million \$2018) | | | | | | | |

Table 45: E+RE- scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|--------|--------|--------|--------|--------|--------|--------|
| Installed thermal - Coal (MW) | 8,052 | 464 | 464 | 464 | 464 | 464 | 0 |
| Installed thermal - Natural gas (MW) | 45,534 | 38,955 | 37,249 | 37,651 | 35,136 | 33,955 | 17,165 |
| Installed thermal - Nuclear (MW) | 3,797 | 3,797 | 8,977 | 14,225 | 18,847 | 27,013 | 41,575 |
| Installed renewables - Rooftop PV (MW) | 723 | 1,179 | 1,661 | 2,333 | 3,256 | 4,426 | 5,903 |
| Installed renewables - Solar - Base land use assumptions (MW) | 2,586 | 13,500 | 28,228 | 29,554 | 29,554 | 29,554 | 29,554 |
| Installed renewables - Offshore Wind - Base land use assumptions (MW) | 0 | 93.8 | 93.8 | 93.8 | 93.8 | 93.8 | 93.8 |
| Installed renewables - Solar - Constrained land use assumptions (MW) | 2,651 | 13,709 | 27,709 | 29,123 | 29,123 | 29,228 | 29,228 |
| Installed renewables - Wind - Constrained land use assumptions (MW) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Installed renewables - Offshore Wind - Constrained land use assumptions (MW) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Capital invested - Solar PV - Base (billion \$2018) | | 14.6 | 17.6 | 1.46 | 0 | 0 | 0 |
| Capital invested - Offshore Wind - Base (billion \$2018) | | 0.266 | 0 | 0 | 0 | 0 | 0 |
| Capital invested - Solar PV - Constrained (billion \$2018) | | 14.8 | 16.7 | 1.56 | 0 | 0.104 | 0 |

Table 46: E+RE- scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|--------|--------|--------|--------|--------|
| Solar - Base land use assumptions (GWh) | 6,248 | 28,551 | 58,304 | 60,985 | 60,985 | 60,985 | 60,985 |
| Wind - Base land use assumptions (GWh) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OffshoreWind - Base land use assumptions (GWh) | 0 | 285 | 285 | 285 | 285 | 285 | 285 |
| Solar - Constrained land use assumptions (GWh) | 6,248 | 28,832 | 57,133 | 59,957 | 59,957 | 60,169 | 60,169 |
| Wind - Constrained land use assumptions (GWh) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OffshoreWind - Constrained land use assumptions (GWh) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|--------|
| Carbon sink potential - Low - Accelerate | | | | | | | -665 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Avoid | | | | | | | -654 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Extend | | | | | | | -2,380 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Improve | | | | | | | -1,929 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -3,101 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | - | | | | | -344 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Carbon sink potential - Low - Reforest | | | | | | | -23 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest pasture (1000 tC02e/y) | | | | | | | -613 |
| Carbon sink potential - Low - Restore productivity (1000 tC02e/y) | | | | | | | -1,612 |
| Carbon sink potential - Low - All (not | | | | | | | -11,529 |
| counting overlap) (1000 tC02e/y) Carbon sink potential - Mid - Accelerate | | | | | | | -99 |
| regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid | | | | | | | -2,289 |
| deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend | | | | | | | -4,28 |
| rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve | | | | | | | -2,82 |
| plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase | | | | | | | -6,20 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) | | | | | | | -664 |
| Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | | | | | | | -34 |
| Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) | | | | | | | -4,35 |
| Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) | | | | | | | -3,19 |
| Carbon sink potential - Mid - All (not | | | | | | | -25,16 |
| Carbon sink potential - High - Accelerate | | | | | | | -1,32 |
| regeneration (1000 tCO2e/y) Carbon sink potential - High - Avoid | | | | | | | -3,92 |
| deforestation (1000 tCO2e/y) Carbon sink potential - High - Extend | | | | | | | -6,19 |
| rotation length (1000 tCO2e/y) Carbon sink potential - High - Improve | | | | | | | -3,79 |
| plantations (1000 tCO2e/y) Carbon sink potential - High - Increase | | | | | | | -9,30 |
| retention of HWP (1000 tCO2e/y) Carbon sink potential - High - Increase | | | | | | | -98 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest cropland (1000 tCO2e/y) | | | | | | | -46 |
| Carbon sink potential - High - Reforest pasture (1000 tCO2e/y) | | | | | | | -8,09 |
| Carbon sink potential - High - All (not counting overlap) (1000 tCO2e/y) | | | | | | | -38,86 |
| Carbon sink potential - High - Restore productivity (1000 tCO2e/y) | | | | | | | -4,78 |
| Land impacted for carbon sink potential - | | | | | | | 10 |
| Low - Accelerate regeneration (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - Low - Avoid deforestation (over 30 years) | | | | | | | 49 |
| (1000 hectares) Land impacted for carbon sink potential - | | | | | | | 1,21 |
| Low - Extend rotation length (1000 hectares) | | | | | | | ., |
| Land impacted for carbon sink potential - Low - Improve plantations (1000 | | | | | | | 69 |
| hectares) | | | | | | | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|-------|
| Land impacted for carbon sink potential - Low - Increase retention of HWP (1000 | | | | | | | 0 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 49.2 |
| Low - Increase trees outside forests | | | | | | | 77.2 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 15.3 |
| Low - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 39.9 |
| Low - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 959 |
| Low - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,579 |
| Low - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | 4/0 |
| Land impacted for carbon sink potential - | | | | | | | 163 |
| Mid - Accelerate regeneration (1000 | | | | | | | |
| hectares) Land impacted for carbon sink potential - | | | | | | | 515 |
| Mid - Avoid deforestation (over 30 years) | | | | | | | סוס |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | + | + | | | | | 2,185 |
| Mid - Extend rotation length (1000 | | | | | | | 2,100 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,051 |
| 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 - | | | | | | | 71.3 |
| Mid - Increase trees outside forests (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 22.9 |
| Mid - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 288 |
| Mid - Reforest pasture (1000 hectares) | | | | | | | 1.001 |
| Land impacted for carbon sink potential - | | | | | | | 1,931 |
| Mid - Restore productivity (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 6,227 |
| Mid - Total impacted (over 30 years) (1000 | | | | | | | 0,221 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 217 |
| High - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 531 |
| High - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,159 |
| High - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,397 |
| High - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| High - Increase retention of HWP (1000 | | | | | | | |
| hectares) | | | | | | | 00.7 |
| Land impacted for carbon sink potential - High - Increase trees outside forests | | | | | | | 93.4 |
| mun - mu case li ees uulside lui ests | | | 1 | | 1 | 1 | |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-------|
| Land impacted for carbon sink potential - | | | | | | | 30.5 |
| High - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 230 |
| High - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,585 |
| High - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 7,243 |
| High - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |

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

| Table 48: E+RE- scenario - PILLAR 6: Land | l sinks - Agri | culture | | | | | |
|--|----------------|---------|------|------|------|------|--------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Carbon sink potential - Moderate | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,066 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -14.8 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,081 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,077 |
| deployment - Cropland measures (1000 | | | | | | | • |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -29.6 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,107 |
| deployment - Total (1000 tC02e/y) | | | | | | | _, |
| Land impacted for carbon sink - Moderate | | | | | | | 0 |
| deployment - Corn-ethanol to energy | | | | | | | · · |
| grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 559 |
| deployment - Cropland measures (1000 | | | | | | | 007 |
| hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 26.9 |
| deployment - Permanent conservation | | | | | | | 20.7 |
| cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 586 |
| deployment - Total (1000 hectares) | | | | | | | 500 |
| Land impacted for carbon sink - | | | | | | | 0 |
| Aggressive deployment - Corn-ethanol to | | | | | | | U |
| energy grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 1,091 |
| Aggressive deployment - Cropland | | | | | | | 1,091 |
| measures (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 53.8 |
| Aggressive deployment - Permanent | | | | | | | 55.6 |
| | | | | | | | |
| conservation cover (1000 hectares) Land impacted for carbon sink - | | | | | | | 1,144 |
| Aggressive deployment - Total (1000 | | | | | | | 1,144 |
| hectares) | | | | | | | |
| Hedidlesj | | | | | | | |

Table 49: E-B+ scenario - IMPACTS - Health

| Table 49: <i>E-B+ scenario - IMPACTS - Health</i> Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|-------|-------|-------|-------|-------|-------|
| Premature deaths from air pollution - | 2020 | 59.2 | 0.262 | 0.193 | 0.088 | 0.042 | 0.002 |
| Fuel Comb - Electric Generation - Coal | | 07.2 | 0.202 | 0.170 | 0.000 | 0.0.2 | 0.002 |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 85.6 | 69.7 | 50.7 | 28.7 | 14.7 | 4.89 |
| Fuel Comb - Electric Generation - Natural | | | | | | | |
| Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 668 | 687 | 681 | 624 | 506 | 353 |
| Mobile - On-Road (deaths) | | | | | | | |
| Premature deaths from air pollution - Gas | | 54.2 | 55.7 | 54.7 | 49.8 | 40.1 | 28 |
| Stations (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 13.5 | 12.4 | 11.4 | 10.1 | 8.42 | 6.5 |
| Fuel Comb - Residential - Natural Gas | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1.66 | 1.6 | 1.54 | 1.37 | 1.07 | 0.748 |
| Fuel Comb - Residential - Oil (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 4.02 | 4.06 | 4.08 | 3.91 | 3.45 | 2.88 |
| Fuel Comb - Residential - Other (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 2.82 | 2.76 | 2.68 | 2.59 | 2.5 | 2.39 |
| Fuel Comb - Comm/Institutional - Coal | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 25.7 | 27.2 | 27.6 | 25.3 | 21 | 16.4 |
| Fuel Comb - Comm/Institutional - Natural | | | | | | | |
| Gas (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 2.23 | 2.04 | 1.87 | 1.65 | 1.41 | 1.18 |
| Fuel Comb - Comm/Institutional - Oil | | | | | | | |
| (deaths) | | | | | | | |
| Premature deaths from air pollution - | | 1.42 | 1.31 | 1.19 | 1.07 | 0.954 | 0.834 |
| Fuel Comb - Comm/Institutional - Other | | | | | | | |
| (deaths) | | 101 | | | | | |
| Premature deaths from air pollution - | | 1.26 | 0.482 | 0.489 | 0.49 | 0.5 | 0.498 |
| Industrial Processes - Coal Mining | | | | | | | |
| (deaths) | | (1.0 | 5.0 | 507 | 15. | (1) | 007 |
| Premature deaths from air pollution - | | 61.3 | 56.9 | 50.7 | 45.6 | 41.4 | 29.7 |
| Industrial Processes - Oil & Gas | | | | | | | |
| Production (deaths) | | 524 | 2.32 | 1.71 | 0.784 | 0.270 | 0.022 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal | | 524 | 2.32 | 1.71 | 0.784 | 0.369 | 0.022 |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 758 | 617 | 449 | 255 | 130 | 43.3 |
| Fuel Comb - Electric Generation - Natural | | 136 | 011 | 447 | 255 | 130 | 43.3 |
| Gas (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 5,938 | 6,110 | 6,052 | 5,549 | 4,499 | 3,142 |
| Mobile - On-Road (million \$2019) | | 3,736 | 6,110 | 0,032 | 3,349 | 4,477 | 3,142 |
| Monetary damages from air pollution - | | 480 | 493 | 484 | 441 | 355 | 248 |
| Gas Stations (million \$2019) | | 400 | 473 | 404 | 441 | 333 | 240 |
| Monetary damages from air pollution - | | 120 | 110 | 101 | 89.9 | 74.6 | 57.6 |
| Fuel Comb - Residential - Natural Gas | | 120 | 110 | 101 | 07.7 | 14.0 | 31.0 |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 14.7 | 14.2 | 13.6 | 12.1 | 9.52 | 6.63 |
| Fuel Comb - Residential - Oil (million | | 14.1 | 17.2 | 10.0 | 12.1 | 7.02 | 0.00 |
| \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 35.6 | 36 | 36.2 | 34.7 | 30.6 | 25.6 |
| Fuel Comb - Residential - Other (million | | 00.0 | | 55.2 | 0 | 00.0 | 20.0 |
| \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 25 | 24.4 | 23.7 | 22.9 | 22.1 | 21.1 |
| Fuel Comb - Comm/Institutional - Coal | | -0 | 2 | 20.1 | | | 21.1 |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 227 | 241 | 244 | 224 | 186 | 146 |
| Fuel Comb - Comm/Institutional - Natural | | | | | | .50 | |
| | | | | | | | |

Table 49: E-B+ scenario - IMPACTS - Health (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Monetary damages from air pollution - | | 19.7 | 18.1 | 16.5 | 14.6 | 12.5 | 10.5 |
| Fuel Comb - Comm/Institutional - Oil | | | | | | | |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 12.6 | 11.6 | 10.6 | 9.51 | 8.44 | 7.38 |
| Fuel Comb - Comm/Institutional - Other | | | | | | | |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 11.2 | 4.26 | 4.31 | 4.33 | 4.42 | 4.39 |
| Industrial Processes - Coal Mining | | | | | | | |
| (million \$2019) | | | | | | | |
| Monetary damages from air pollution - | | 544 | 505 | 450 | 405 | 367 | 263 |
| Industrial Processes - Oil & Gas | | | | | | | |
| Production (million \$2019) | | | | | | | |

Table 50: E-B+ scenario - IMPACTS - Jobs

| Table 30. E-D+ Scellul 10 - IMPAGIS - Jubs | | | | | | | |
|---|------|--------|--------|--------|--------|--------|---------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| By economic sector - Agriculture (jobs) | | 492 | 793 | 1,130 | 1,235 | 1,661 | 1,782 |
| By economic sector - Construction (jobs) | | 23,542 | 37,062 | 39,726 | 36,595 | 39,357 | 56,156 |
| By economic sector - Manufacturing | | 9,629 | 15,376 | 12,578 | 10,733 | 14,301 | 16,719 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 5,426 | 4,172 | 3,305 | 2,552 | 2,010 | 1,200 |
| By economic sector - Other (jobs) | | 2,858 | 5,690 | 6,929 | 6,509 | 7,563 | 13,085 |
| By economic sector - Pipeline (jobs) | | 1,341 | 1,652 | 1,012 | 923 | 822 | 773 |
| By economic sector - Professional (jobs) | | 10,368 | 14,440 | 17,124 | 16,862 | 19,394 | 27,616 |
| By economic sector - Trade (jobs) | | 7,424 | 10,098 | 11,616 | 11,224 | 12,555 | 18,721 |
| By economic sector - Utilities (jobs) | | 21,733 | 26,791 | 29,339 | 30,521 | 33,914 | 42,451 |
| By resource sector - Biomass (jobs) | | 1,955 | 2,133 | 3,825 | 5,185 | 7,687 | 8,407 |
| By resource sector - CO2 (jobs) | | 85.3 | 4,862 | 1,551 | 1,949 | 2,918 | 3,852 |
| By resource sector - Coal (jobs) | | 1,089 | 0 | 0 | 0 | 0 | 0 |
| By resource sector - Grid (jobs) | | 26,426 | 35,993 | 45,989 | 49,091 | 56,179 | 75,530 |
| By resource sector - Natural Gas (jobs) | | 16,539 | 13,214 | 11,562 | 10,505 | 9,606 | 6,870 |
| By resource sector - Nuclear (jobs) | | 1,917 | 1,887 | 1,857 | 1,828 | 1,799 | 1,605 |
| By resource sector - Oil (jobs) | | 11,812 | 9,869 | 8,262 | 6,926 | 5,035 | 2,758 |
| By resource sector - Solar (jobs) | | 22,931 | 47,395 | 49,316 | 40,898 | 45,310 | 76,653 |
| By resource sector - Wind (jobs) | | 58.1 | 722 | 396 | 775 | 3,041 | 2,828 |
| By education level - All sectors - High | | 34,992 | 50,064 | 52,823 | 50,210 | 56,348 | 76,388 |
| school diploma or less (jobs) | | | | | - | | • |
| By education level - All sectors - | | 26,235 | 37,165 | 39,241 | 37,470 | 42,079 | 57,483 |
| Associates degree or some college (jobs) | | | | | | | |
| By education level - All sectors - | | 16,900 | 22,601 | 23,902 | 22,906 | 25,752 | 34,557 |
| Bachelors degree (jobs) | | | | | | | |
| By education level - All sectors - Masters | | 4,107 | 5,466 | 5,925 | 5,733 | 6,456 | 8,768 |
| or professional degree (jobs) | | | | | | | |
| By education level - All sectors - Doctoral | | 578 | 778 | 868 | 836 | 942 | 1,306 |
| degree (jobs) | | | | | | | |
| Related work experience - All sectors - | | 12,048 | 16,971 | 18,012 | 17,250 | 19,379 | 26,358 |
| None (jobs) | | | | | | | |
| Related work experience - All sectors - Up | | 16,372 | 23,620 | 25,057 | 23,796 | 26,883 | 36,733 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - All sectors - 1 | | 29,883 | 41,490 | 43,922 | 41,976 | 47,068 | 63,755 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - All sectors - 4 | | 19,422 | 26,953 | 28,420 | 27,138 | 30,373 | 41,097 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - | | 5,089 | 7,040 | 7,347 | 6,995 | 7,873 | 10,561 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - None | | 4,494 | 6,316 | 6,724 | 6,388 | 7,175 | 9,866 |
| (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Up to 1 | | 54,026 | 75,439 | 79,768 | 76,189 | 85,929 | 116,173 |
| year (jobs) | | | | | | | |

| Table 50: <i>E</i> | B+ scenario | TMPACTS | .Inhs I | rontinuedl |
|--------------------|-------------|---------|---------|------------|

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|---------|
| On-the-Job Training - All sectors - 1 to 4 years (jobs) | | 17,706 | 24,918 | 26,264 | 25,046 | 27,947 | 37,992 |
| On-the-Job Training - All sectors - 4 to 10 years (jobs) | | 5,786 | 8,234 | 8,811 | 8,428 | 9,292 | 12,795 |
| On-the-Job Training - All sectors - Over 10 years (jobs) | | 801 | 1,166 | 1,192 | 1,103 | 1,233 | 1,678 |
| On-Site or In-Plant Training - All sectors - None (jobs) | | 13,355 | 18,822 | 19,892 | 18,899 | 21,273 | 29,007 |
| On-Site or In-Plant Training - All sectors - Up to 1 year (jobs) | | 49,149 | 68,643 | 72,599 | 69,360 | 78,142 | 105,700 |
| On-Site or In-Plant Training - All sectors - 1 to 4 years (jobs) | | 13,701 | 19,305 | 20,355 | 19,405 | 21,678 | 29,466 |
| On-Site or In-Plant Training - All sectors - 4 to 10 years (jobs) | | 5,885 | 8,279 | 8,825 | 8,442 | 9,310 | 12,733 |
| On-Site or In-Plant Training - All sectors - Over 10 years (jobs) | | 723 | 1,025 | 1,089 | 1,048 | 1,174 | 1,597 |
| Wage income - All (million \$2019) | | 4,157 | 5,747 | 6,155 | 5,975 | 6,774 | 9,225 |

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

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|-------|
| Final energy use - Transportation (PJ) | 1,919 | 1,820 | 1,686 | 1,572 | 1,479 | 1,369 | 1,239 |
| Final energy use - Residential (PJ) | 511 | 494 | 487 | 477 | 464 | 448 | 440 |
| Final energy use - Commercial (PJ) | 434 | 438 | 434 | 430 | 423 | 419 | 420 |
| Final energy use - Industry (PJ) | 555 | 584 | 600 | 630 | 661 | 675 | 696 |

Table 52: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|------|
| Electricity distribution capital invested - | | 6.42 | 5.91 | 9.28 | 9.23 | 14.5 | 15.1 |
| Cumulative 5-yr (billion \$2018) | | | | | | | |

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

| •• | • | • | • | | | | |
|--|--------|--------|--------|--------|--------|--------|--------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Vehicle stocks - LDV – EV (1000 units) | 183 | 600 | 1,016 | 2,946 | 4,875 | 9,145 | 13,415 |
| Vehicle stocks - LDV – All others (1000 | 17,536 | 17,536 | 17,536 | 16,634 | 15,732 | 12,123 | 8,514 |
| units) | | | | | | | |
| Light-duty vehicle capital costs vs. REF - | | 0 | 553 | 1,131 | 3,850 | 12,021 | 17,546 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Public EV charging plugs - DC Fast (1000 | 0.717 | | 1.71 | | 8.21 | | 22.6 |
| units) | | | | | | | |
| Public EV charging plugs - L2 (1000 units) | 3.3 | | 41.1 | | 197 | | 543 |

Table 54: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Residential

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|------|-------|-------|-------|-------|-------|
| Sales of space heating units - Electric | 51.7 | 55.7 | 58.3 | 66.2 | 77.9 | 85.5 | 88.2 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 40 | 39.5 | 37.2 | 30.4 | 20.2 | 13.6 | 11.3 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 7.51 | 3.99 | 3.69 | 2.89 | 1.63 | 0.801 | 0.513 |
| Sales of space heating units - Fossil (%) | 0.822 | 0.81 | 0.749 | 0.558 | 0.266 | 0.083 | 0.021 |
| Sales of water heating units - Electric | 0 | 2.12 | 8.14 | 25.5 | 52.1 | 69.4 | 75.5 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 88.4 | 91.5 | 85.8 | 69.3 | 44.1 | 27.6 | 21.9 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas Furnace | 6.88 | 3.79 | 3.49 | 2.63 | 1.29 | 0.412 | 0.107 |
| (%) | | | | | | | |
| Sales of water heating units - Other (%) | 4.69 | 2.6 | 2.57 | 2.58 | 2.57 | 2.54 | 2.52 |

Table 54: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Residential (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|-------|-------|
| Sales of cooking units - Electric | 96 | 96.1 | 96.5 | 97.4 | 98.8 | 99.6 | 99.9 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 4.01 | 3.91 | 3.54 | 2.57 | 1.23 | 0.395 | 0.106 |
| Residential HVAC investment in 2020s vs. | | 16 | 20 | | | | |
| REF - Cumulative 5-yr (billion \$2018) | | | | | | | |

Table 55: E-B+ scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|--------|------|------|-------|-------|
| Sales of space heating units - Electric | 23.9 | 18.7 | 23.8 | 38 | 60.4 | 76.6 | 82.8 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 22.7 | 8.23 | 8.33 | 9.11 | 10.8 | 11.9 | 12.5 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 53.5 | 68.6 | 63.8 | 49.8 | 27.3 | 11 | 4.53 |
| Sales of space heating units - Fossil (%) | 0 | 4.41 | 4 | 3.07 | 1.56 | 0.485 | 0.126 |
| Sales of water heating units - Electric | 0.849 | 2.05 | 7.03 | 21.4 | 43.4 | 57.8 | 62.8 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 20.9 | 8.16 | 9.94 | 15.6 | 24.4 | 30 | 32 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas (%) | 69.5 | 85.5 | 78.7 | 59.1 | 28.9 | 9.24 | 2.41 |
| Sales of water heating units - Other (%) | 8.69 | 4.32 | 4.29 | 3.91 | 3.39 | 3 | 2.87 |
| Sales of cooking units - Electric | 32 | 36.2 | 40.9 | 53.4 | 71 | 81.7 | 85.5 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 68 | 63.8 | 59.1 | 46.6 | 29 | 18.3 | 14.5 |
| Commercial HVAC investment in 2020s - | | 66,742 | 74,583 | | | | |
| Cumulative 5-yr (million \$2018) | | | | | | | |

Table 56: E-B+ scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|--------|--------|--------|--------|--------|--------|--------|
| Installed thermal - Coal (MW) | 8,052 | 0 | 0 | 0 | 0 | 0 | 0 |
| Installed thermal - Natural gas (MW) | 45,534 | 41,886 | 41,256 | 38,498 | 32,509 | 19,990 | 12,718 |
| Installed thermal - Nuclear (MW) | 3,797 | 3,797 | 3,798 | 3,798 | 3,798 | 3,798 | 2,922 |
| Capital invested - Biomass power plant (billion \$2018) | 0 | 0.004 | 0.523 | 0 | 0 | 0 | 0 |
| Capital invested - Biomass w/ccu allam power plant (billion \$2018) | 0 | 0 | 0 | 0.038 | 0.007 | 0.016 | 0.021 |
| Capital invested - Biomass w/ccu power plant (billion \$2018) | 0 | 0 | 0.049 | 11.5 | 2.18 | 5.85 | 0 |

Table 57: E-B+ scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---------------------------------------|------|------|-------|--------|--------|--------|--------|
| Biomass power plant (GWh) | 0 | 7.52 | 1,035 | 1,035 | 1,035 | 1,035 | 1,035 |
| Biomass w/ccu power plant (GWh) | 0 | 0 | 55.3 | 12,921 | 15,365 | 21,928 | 21,928 |
| Biomass w/ccu allam power plant (GWh) | 0 | 0 | 0 | 37.7 | 44.2 | 60.6 | 81.5 |

Table 58: E-B+ scenario - PILLAR 3: Clean fuels - Bioenergy

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|------|
| Number of facilities - Power (quantity) | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Number of facilities - Power ccu | 0 | 0 | 1 | 10 | 12 | 17 | 17 |
| (quantity) | | | | | | | |
| Number of facilities - Allam power w ccu | 0 | 0 | 0 | 1 | 2 | 3 | 4 |
| (quantity) | | | | | | | |
| Number of facilities - Beccs hydrogen | 0 | 0 | 0 | 2 | 6 | 13 | 18 |
| (quantity) | | | | | | | |
| Number of facilities - Diesel (quantity) | 0 | 0 | 0 | 1 | 1 | 1 | 1 |
| Number of facilities - Diesel ccu (quantity) | 0 | 0 | 0 | 1 | 2 | 3 | 3 |
| Number of facilities - Pyrolysis (quantity) | 0 | 0 | 0 | 1 | 1 | 1 | 1 |

| Table 58: E-B+ | scenario - | DTII AR 3. | Clean fuels. | . Rineneray | (continued) |
|----------------|--------------|------------|----------------|-----------------|-------------|
| 14016 30. E-D+ | SCEIIUI IU - | PILLAR J. | Gieuri rueis - | - Diuellei uv i | CUILLIIUEUI |

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|--------|-------|--------|-------|
| Number of facilities - Pyrolysis ccu | 0 | 0 | 0 | 1 | 2 | 4 | 5 |
| (quantity) | | | | | | | |
| Number of facilities - Sng (quantity) | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| Number of facilities - Sng ccu (quantity) | 0 | 0 | 1 | 1 | 1 | 1 | 1 |
| Conversion capital investment - | | 4.32 | 629 | 12,720 | 5,513 | 11,510 | 4,739 |
| Cumulative 5-yr (million \$2018) | | | | | | | |
| Biomass purchases (million \$2018/y) | | 1.01 | 80.4 | 1,065 | 1,523 | 2,465 | 2,875 |

Table 59: E-B+ scenario - PILLAR 4: CCUS - CO2 capture

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|------------------------------------|------|------|------|------|------|------|------|
| Annual - All (MMT) | | 0 | 0.07 | 17.3 | 27.8 | 45.3 | 53 |
| Annual - BECCS (MMT) | | 0 | 0.06 | 15.5 | 22.4 | 36.8 | 42.7 |
| Annual - NGCC (MMT) | | 0 | 0.02 | 1.74 | 2.06 | 1.65 | 3.24 |
| Annual - Cement and lime (MMT) | | 0 | 0 | 0 | 3.32 | 6.84 | 7.07 |
| Cumulative - All (MMT) | | 0 | 0.07 | 17.3 | 45.1 | 90.4 | 144 |
| Cumulative - BECCS (MMT) | | 0 | 0.06 | 15.6 | 38 | 74.8 | 118 |
| Cumulative - NGCC (MMT) | | 0 | 0.02 | 1.76 | 3.82 | 5.47 | 8.71 |
| Cumulative - Cement and lime (MMT) | | 0 | 0 | 0 | 3.32 | 10.2 | 17.2 |

Table 60: E-B+ scenario - PILLAR 4: CCUS - CO2 pipelines

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|-------|-------|-------|-------|-------|
| Trunk (km) | | 0 | 636 | 636 | 636 | 636 | 636 |
| Spur (km) | | 0 | 251 | 722 | 986 | 1,813 | 2,568 |
| All (km) | | 0 | 886 | 1,358 | 1,622 | 2,448 | 3,203 |
| Cumulative investment - Trunk (million \$2018) | | 0 | 3,047 | 3,047 | 3,250 | 3,250 | 3,250 |
| Cumulative investment - Spur (million \$2018) | | 0 | 129 | 608 | 902 | 1,634 | 2,133 |
| Cumulative investment - All (million \$2018) | | 0 | 3,177 | 3,655 | 4,152 | 4,884 | 5,383 |

Table 61: E-B+ scenario - PILLAR 4: CCUS - CO2 storage

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|-------|-------|-------|-------|
| Annual (MMT) | | 0 | 3.69 | 15 | 33.3 | 45.3 | 48.5 |
| Injection wells (wells) | | 0 | 8 | 34 | 62 | 102 | 128 |
| Resource characterization, appraisal, permitting costs (million \$2020) | | 159 | 625 | 906 | 906 | 906 | 906 |
| Wells and facilities construction costs (million \$2020) | | 0 | 270 | 1,053 | 1,877 | 3,138 | 3,896 |

Table 62: E-B+ scenario - PILLAR 6: Land sinks - Forests

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|--------|
| Carbon sink potential - Low - Accelerate | | | | | | | -665 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Avoid | | | | | | | -654 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Extend | | | | | | | -2,380 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Improve | | | | | | | -1,929 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -3,101 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Increase | | | | | | | -344 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - Reforest | | | | | | | -231 |
| cropland (1000 tCO2e/y) | | | | | | | |

Table 62: E-B+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item Contantial Law Referent | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Carbon sink potential - Low - Reforest | | | | | | | -613 |
| pasture (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Low - Restore | | | | | | | -1,612 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Low - All (not | | | | | | | -11,529 |
| counting overlap) (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Accelerate | | | | | | | -997 |
| regeneration (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Avoid | | | | | | | -2,289 |
| deforestation (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Extend | | | | | | | -4,287 |
| rotation length (1000 tCO2e/y) | | | | | | | , - |
| Carbon sink potential - Mid - Improve | | | | | | | -2,827 |
| plantations (1000 tCO2e/y) | | | | | | | 2,021 |
| Carbon sink potential - Mid - Increase | | | | | | | -6,203 |
| • | | | | | | | -0,203 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Increase | | | | | | | -664 |
| trees outside forests (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -346 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Reforest | | | | | | | -4,354 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Mid - Restore | | | | | | | -3,196 |
| productivity (1000 tCO2e/y) | | | | | | | • |
| Carbon sink potential - Mid - All (not | | | | | | | -25,162 |
| counting overlap) (1000 tC02e/y) | | | | | | | 20,102 |
| Carbon sink potential - High - Accelerate | | | | | | | -1,328 |
| regeneration (1000 tCO2e/y) | | | | | | | -1,520 |
| | | | | | | | 2.000 |
| Carbon sink potential - High - Avoid | | | | | | | -3,923 |
| deforestation (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - Extend | | | | | | | -6,195 |
| rotation length (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Improve | | | | | | | -3,791 |
| plantations (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | -9,304 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | -983 |
| trees outside forests (1000 tCO2e/y) | | | | | | | , , , |
| Carbon sink potential - High - Reforest | | | | | | | -462 |
| cropland (1000 tCO2e/y) | | | | | | | -402 |
| Carbon sink potential - High - Reforest | | | | | | | 0.00 |
| | | | | | | | -8,095 |
| pasture (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - All (not | | | | | | | -38,862 |
| counting overlap) (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Restore | | | | | | | -4,78 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 109 |
| Low - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 499 |
| Low - Avoid deforestation (over 30 years) | | | | | | | .,, |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,210 |
| | | | | | | | 1,210 |
| Low - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 698 |
| Low - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | (|
| Land impacted for car borrounk potential - | | | | | | | |
| Low - Increase retention of HWP (1000 | | | | | | | |

Table 62: E-B+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-------|
| Land impacted for carbon sink potential - | | | | | | | 49.2 |
| Low - Increase trees outside forests (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | + | | | | | | 15.3 |
| Low - Reforest cropland (1000 hectares) | | | | | | | 10.0 |
| Land impacted for carbon sink potential - | | | | | | | 39.9 |
| Low - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 959 |
| Low - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,579 |
| Low - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) Land impacted for carbon sink potential - | | | | | | | 163 |
| Mid - Accelerate regeneration (1000 | | | | | | | 103 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 515 |
| Mid - Avoid deforestation (over 30 years) | | | | | | | 0.0 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 2,185 |
| Mid - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,051 |
| 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 - | | | | | | | 71.3 |
| Mid - Increase trees outside forests (1000 | | | | | | | 71.3 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 22.9 |
| Mid - Reforest cropland (1000 hectares) | | | | | | | , |
| Land impacted for carbon sink potential - | | | | | | | 288 |
| Mid - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,931 |
| Mid - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 6,227 |
| Mid - Total impacted (over 30 years) (1000 | | | | | | | |
| hectares) Land impacted for carbon sink potential - | | | | | | | 217 |
| High - Accelerate regeneration (1000 | | | | | | | 211 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 531 |
| High - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,159 |
| High - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,397 |
| High - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - High - Increase retention of HWP (1000 | | | | | | | 0 |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | - | | | | | | 93.4 |
| High - Increase trees outside forests | | | | | | | 73.4 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 30.5 |
| High - Reforest cropland (1000 hectares) | | | | | | | |
| mgn - Noron cat of opiana (1000 nectal 68) | | | | | | | |

Table 62: E-B+ scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|------|------|------|------|------|------|-------|
| Land impacted for carbon sink potential - | | | | | | | 230 |
| High - Reforest pasture (1000 hectares) | | | | | | | 1 505 |
| Land impacted for carbon sink potential - High - Restore productivity (1000 hectares) | | | | | | | 1,585 |
| Land impacted for carbon sink potential - High - Total impacted (over 30 years) (1000 hectares) | | | | | | | 7,243 |

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|--------|
| Carbon sink potential - Moderate | | | | | | | -12.5 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,055 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -14.6 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | C |
| deployment - Cropland to woody energy | | | | | | | |
| crops (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | C |
| deployment - Pasture to energy crops | | | | | | | |
| (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Moderate | | | | | | | -1,082 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -12.5 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,056 |
| deployment - Cropland measures (1000 | | | | | | | |
| tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -29.1 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | C |
| deployment - Cropland to woody energy | | | | | | | |
| crops (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | C |
| deployment - Pasture to energy crops | | | | | | | |
| (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - Aggressive | | | | | | | -2,098 |
| deployment - Total (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 7.89 |
| deployment - Corn-ethanol to energy | | | | | | | |
| grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 555 |
| deployment - Cropland measures (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 26.5 |
| deployment - Permanent conservation | | | | | | | |
| cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 5.3 |
| deployment - Cropland to woody energy | | | | | | | |
| crops (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - Moderate | | | | | | | 365 |
| deployment - Pasture to energy crops | | | | | | | |
| (1000 hectares) | | | | | | | |

Table 63: E-B+ scenario - PILLAR 6: Land sinks - Agriculture (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|-------|
| Land impacted for carbon sink - Moderate | | | | | | | 960 |
| deployment - Total (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 7.89 |
| Aggressive deployment - Corn-ethanol to | | | | | | | |
| energy grasses (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 2,674 |
| Aggressive deployment - Cropland | | | | | | | |
| measures (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 52.9 |
| Aggressive deployment - Permanent | | | | | | | |
| conservation cover (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 5.31 |
| Aggressive deployment - Cropland to | | | | | | | |
| woody energy crops (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 365 |
| Aggressive deployment - Pasture to | | | | | | | |
| energy crops (1000 hectares) | | | | | | | |
| Land impacted for carbon sink - | | | | | | | 3,105 |
| Aggressive deployment - Total (1000 | | | | | | | |
| hectares) | | | | | | | |

Table 64: REF scenario - IMPACTS - Health

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|-------|-------|-------|
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Coal (deaths) | | 226 | 156 | 111 | 97.2 | 88.6 | 86.7 |
| Premature deaths from air pollution - Fuel Comb - Electric Generation - Natural Gas (deaths) | | 88.6 | 93.9 | 99.9 | 116 | 116 | 111 |
| Premature deaths from air pollution - Mobile - On-Road (deaths) | | 666 | 695 | 724 | 759 | 795 | 832 |
| Premature deaths from air pollution - Gas Stations (deaths) | | 54 | 56.1 | 58.2 | 60.8 | 63.4 | 65.8 |
| Premature deaths from air pollution - Fuel Comb - Residential - Natural Gas (deaths) | | 13.4 | 12.4 | 11.8 | 11.5 | 11.6 | 11.7 |
| Premature deaths from air pollution - Fuel Comb - Residential - Oil (deaths) | | 1.62 | 1.38 | 1.03 | 0.709 | 0.472 | 0.338 |
| Premature deaths from air pollution - Fuel Comb - Residential - Other (deaths) | | 3.99 | 4.15 | 4.4 | 4.71 | 5.01 | 5.31 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Coal (deaths) | | 2.95 | 3.01 | 3.08 | 3.13 | 3.18 | 3.22 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (deaths) | | 25.8 | 26.6 | 25.9 | 24.7 | 24.7 | 26.2 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Oil (deaths) | | 2.31 | 2.3 | 2.28 | 2.21 | 2.18 | 2.19 |
| Premature deaths from air pollution - Fuel Comb - Comm/Institutional - Other (deaths) | | 1.48 | 1.55 | 1.62 | 1.69 | 1.76 | 1.84 |
| Premature deaths from air pollution - Industrial Processes - Coal Mining (deaths) | | 2.78 | 1.95 | 1.61 | 1.55 | 1.53 | 1.46 |
| Premature deaths from air pollution - Industrial Processes - Oil & Gas Production (deaths) | | 61.6 | 66.2 | 69.2 | 67.9 | 69 | 66 |

Table 64: REF scenario - IMPACTS - Health (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|-------|-------|-------|-------|-------|-------|
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Coal (million \$2019) | | 1,999 | 1,382 | 986 | 862 | 786 | 769 |
| Monetary damages from air pollution - Fuel Comb - Electric Generation - Natural Gas (million \$2019) | | 785 | 831 | 885 | 1,027 | 1,024 | 986 |
| Monetary damages from air pollution - Mobile - On-Road (million \$2019) | | 5,924 | 6,179 | 6,441 | 6,746 | 7,065 | 7,402 |
| Monetary damages from air pollution - Gas Stations (million \$2019) | | 478 | 497 | 515 | 538 | 561 | 583 |
| Monetary damages from air pollution - Fuel Comb - Residential - Natural Gas (million \$2019) | | 119 | 110 | 104 | 102 | 103 | 103 |
| Monetary damages from air pollution - Fuel Comb - Residential - Oil (million \$2019) | | 14.3 | 12.3 | 9.1 | 6.28 | 4.18 | 3 |
| Monetary damages from air pollution - Fuel Comb - Residential - Other (million \$2019) | | 35.4 | 36.8 | 39 | 41.7 | 44.4 | 47.1 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Coal (million \$2019) | | 26.1 | 26.7 | 27.2 | 27.7 | 28.1 | 28.5 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Natural Gas (million \$2019) | | 228 | 235 | 230 | 219 | 218 | 232 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Oil (million \$2019) | | 20.4 | 20.4 | 20.1 | 19.6 | 19.3 | 19.4 |
| Monetary damages from air pollution - Fuel Comb - Comm/Institutional - Other (million \$2019) | | 13.1 | 13.7 | 14.4 | 15 | 15.6 | 16.3 |
| Monetary damages from air pollution - Industrial Processes - Coal Mining (million \$2019) | | 24.5 | 17.2 | 14.2 | 13.7 | 13.5 | 12.9 |
| Monetary damages from air pollution - Industrial Processes - Oil & Gas Production (million \$2019) | | 547 | 588 | 615 | 603 | 613 | 586 |

Table 65: REF scenario - IMPACTS - Jobs

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|--------|
| By economic sector - Agriculture (jobs) | | 466 | 418 | 413 | 336 | 336 | 364 |
| By economic sector - Construction (jobs) | | 12,419 | 14,484 | 16,577 | 19,431 | 21,033 | 26,511 |
| By economic sector - Manufacturing | | 5,072 | 5,286 | 5,506 | 5,922 | 5,979 | 8,359 |
| (jobs) | | | | | | | |
| By economic sector - Mining (jobs) | | 5,594 | 4,568 | 3,697 | 3,001 | 2,518 | 2,117 |
| By economic sector - Other (jobs) | | 586 | 1,065 | 1,408 | 2,188 | 2,594 | 4,636 |
| By economic sector - Pipeline (jobs) | | 1,382 | 1,438 | 1,456 | 1,373 | 1,389 | 1,377 |
| By economic sector - Professional (jobs) | | 6,599 | 6,748 | 7,239 | 8,432 | 9,093 | 11,605 |
| By economic sector - Trade (jobs) | | 5,058 | 5,024 | 5,125 | 5,906 | 6,332 | 8,447 |
| By economic sector - Utilities (jobs) | | 20,036 | 19,378 | 21,319 | 23,085 | 24,864 | 25,489 |
| By resource sector - Biomass (jobs) | | 1,799 | 1,684 | 1,564 | 1,398 | 1,430 | 1,454 |
| By resource sector - CO2 (jobs) | | 0 | 0.053 | 0.067 | 0.072 | 0.08 | 0.085 |
| By resource sector - Coal (jobs) | | 1,702 | 877 | 557 | 378 | 141 | 0 |
| By resource sector - Grid (jobs) | | 23,287 | 22,197 | 26,226 | 27,870 | 29,785 | 33,356 |
| By resource sector - Natural Gas (jobs) | | 16,511 | 17,041 | 17,208 | 18,778 | 20,511 | 18,548 |
| By resource sector - Nuclear (jobs) | | 1,917 | 1,886 | 1,856 | 1,827 | 1,799 | 1,603 |
| By resource sector - Oil (jobs) | | 11,903 | 10,128 | 8,888 | 8,221 | 7,831 | 7,522 |
| By resource sector - Solar (jobs) | | | 4,351 | 6,216 | 10,992 | 12,616 | 24,948 |
| By resource sector - Wind (jobs) | | 94.6 | 246 | 223 | 211 | 22.8 | 1,475 |

Table 65: REF scenario - IMPACTS - Jobs (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|--------|--------|--------|--------|--------|--------|
| By education level - All sectors - High | 2020 | 23,591 | 24,388 | 26,383 | 29,350 | 31,254 | 37,737 |
| school diploma or less (jobs) | | 20,071 | 24,300 | 20,303 | 27,000 | 31,234 | 31,131 |
| By education level - All sectors - | | 17,996 | 18,514 | 20,071 | 22,461 | 24,019 | 28,797 |
| Associates degree or some college (jobs) | | 11,770 | 10,014 | 20,011 | 22,401 | 24,017 | 20,171 |
| By education level - All sectors - | | 12,248 | 12,155 | 12,758 | 13,972 | 14,742 | 17,456 |
| Bachelors degree (jobs) | | , | ,.55 | ,. 00 | .0,7 | , | , |
| By education level - All sectors - Masters | | 2,987 | 2,960 | 3,116 | 3,430 | 3,633 | 4,315 |
| or professional degree (jobs) | | , - | , | -, | -, | , | , - |
| By education level - All sectors - Doctoral | | 392 | 394 | 411 | 461 | 488 | 601 |
| degree (jobs) | | | | | | | |
| Related work experience - All sectors - | | 8,344 | 8,545 | 9,221 | 10,268 | 10,962 | 13,140 |
| None (jobs) | | | | | | | |
| Related work experience - All sectors - Up | | 10,736 | 11,130 | 12,022 | 13,442 | 14,309 | 17,561 |
| to 1 year (jobs) | | | | | | | |
| Related work experience - All sectors - 1 | | 20,964 | 21,283 | 22,789 | 25,238 | 26,830 | 32,031 |
| to 4 years (jobs) | | | | | | | |
| Related work experience - All sectors - 4 | | 13,601 | 13,839 | 14,849 | 16,472 | 17,527 | 20,815 |
| to 10 years (jobs) | | | | | | | |
| Related work experience - All sectors - | | 3,568 | 3,613 | 3,859 | 4,255 | 4,509 | 5,359 |
| Over 10 years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - None | | 3,014 | 3,080 | 3,281 | 3,660 | 3,887 | 4,761 |
| (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Up to 1 | | 37,491 | 38,074 | 40,709 | 45,054 | 47,831 | 57,514 |
| year (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 1 to 4 | | 12,254 | 12,597 | 13,647 | 15,213 | 16,247 | 19,298 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - 4 to 10 | | 3,953 | 4,130 | 4,534 | 5,110 | 5,496 | 6,501 |
| years (jobs) | | | | | | | |
| On-the-Job Training - All sectors - Over 10 | | 501 | 528 | 568 | 637 | 676 | 831 |
| years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 9,029 | 9,239 | 9,895 | 11,028 | 11,727 | 14,214 |
| None (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 34,143 | 34,700 | 37,140 | 41,115 | 43,668 | 52,446 |
| Up to 1 year (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 9,462 | 9,723 | 10,524 | 11,725 | 12,513 | 14,906 |
| 1 to 4 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 4,077 | 4,228 | 4,611 | 5,168 | 5,543 | 6,528 |
| 4 to 10 years (jobs) | | | | | | | |
| On-Site or In-Plant Training - All sectors - | | 502 | 519 | 569 | 638 | 686 | 811 |
| Over 10 years (jobs) | | | | | | | |
| Wage income - All (million \$2019) | | 2,980 | 3,041 | 3,283 | 3,659 | 3,933 | 4,699 |

Table 66: REF scenario - PILLAR 1: Efficiency/Electrification - Overview

| •• | | | | | | | |
|--|-------|-------|-------|-------|-------|-------|-------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Final energy use - Transportation (PJ) | 1,917 | 1,833 | 1,727 | 1,667 | 1,682 | 1,736 | 1,802 |
| Final energy use - Residential (PJ) | 511 | 502 | 512 | 530 | 554 | 579 | 605 |
| Final energy use - Commercial (PJ) | 434 | 444 | 452 | 461 | 471 | 489 | 515 |
| Final energy use - Industry (PJ) | 555 | 597 | 628 | 656 | 683 | 707 | 739 |

Table 67: REF scenario - PILLAR 1: Efficiency/Electrification - Electricity demand

| | - / / 1 | | | | | | |
|---|---------|------|------|------|------|------|------|
| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
| Electricity distribution capital invested - | | 8.36 | 8.08 | 14.3 | 14.8 | 14.9 | 15.4 |
| Cumulative 5-yr (billion \$2018) | | | | | | | |

| Table 68: REF scenario - | DILLAD 1, Efficiency | /Flootnification | Dooidontial |
|----------------------------|-----------------------|--------------------|-------------|
| Table oo. Ker Scellul io - | PILLAR I. EIIICIEIICV | 7 E18CH 111CHHUH - | Residential |

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|-------|-------|-------|
| Sales of space heating units - Electric | 51.1 | 66.6 | 66.9 | 67.9 | 68.8 | 70.5 | 73.6 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 40.4 | 30.3 | 30.1 | 29.2 | 28.4 | 26.7 | 23.6 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 7.6 | 2.83 | 2.7 | 2.57 | 2.51 | 2.48 | 2.48 |
| Sales of space heating units - Fossil (%) | 0.826 | 0.333 | 0.334 | 0.332 | 0.321 | 0.314 | 0.316 |
| Sales of water heating units - Electric | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 88.4 | 93.5 | 93.5 | 93.5 | 93.5 | 93.5 | 93.5 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas Furnace | 6.88 | 3.89 | 3.9 | 3.92 | 3.93 | 3.93 | 3.93 |
| (%) | | | | | | | |
| Sales of water heating units - Other (%) | 4.69 | 2.6 | 2.57 | 2.58 | 2.57 | 2.54 | 2.53 |
| Sales of cooking units - Electric | 96 | 96 | 96 | 96 | 96 | 96 | 96 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 | 4.04 |
| Residential HVAC investment in 2020s vs. | | 15.8 | 16.2 | | | | |
| REF - Cumulative 5-yr (billion \$2018) | | | | | | | |

Table 69: REF scenario - PILLAR 1: Efficiency/Electrification - Commercial

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|--------|--------|-------|-------|-------|------|
| Sales of space heating units - Electric | 23.9 | 29.3 | 65.2 | 72.1 | 72.1 | 72.3 | 72.4 |
| Heat Pump (%) | | | | | | | |
| Sales of space heating units - Electric | 22.7 | 9.78 | 14.9 | 20.3 | 25.2 | 25.6 | 25.6 |
| Resistance (%) | | | | | | | |
| Sales of space heating units - Gas (%) | 53.5 | 56.8 | 17.5 | 6.48 | 2.56 | 2.06 | 2.02 |
| Sales of space heating units - Fossil (%) | 0 | 4.02 | 2.38 | 1.17 | 0.182 | 0.016 | 0 |
| Sales of water heating units - Electric | 0.849 | 0.3 | 0.292 | 0.292 | 0.293 | 0.29 | 0.29 |
| Heat Pump (%) | | | | | | | |
| Sales of water heating units - Electric | 20.9 | 7.47 | 7.27 | 7.29 | 7.31 | 7.22 | 7.19 |
| Resistance (%) | | | | | | | |
| Sales of water heating units - Gas (%) | 69.5 | 87.9 | 88 | 88 | 87.9 | 88 | 88.1 |
| Sales of water heating units - Other (%) | 8.69 | 4.37 | 4.46 | 4.43 | 4.48 | 4.48 | 4.46 |
| Sales of cooking units - Electric | 32 | 34.3 | 34.3 | 34.3 | 34.4 | 34.3 | 34.3 |
| Resistance (%) | | | | | | | |
| Sales of cooking units - Gas (%) | 68 | 65.7 | 65.7 | 65.7 | 65.6 | 65.7 | 65.7 |
| Commercial HVAC investment in 2020s - | | 65,779 | 68,382 | | | | |
| Cumulative 5-yr (million \$2018) | | | | | | | |

Table 70: REF scenario - PILLAR 2: Clean Electricity - Generating capacity

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|--------|--------|--------|--------|--------|--------|--------|
| Installed thermal - Coal (MW) | 8,052 | 2,344 | 2,344 | 1,122 | 1,122 | 0 | 0 |
| Installed thermal - Natural gas (MW) | 45,526 | 43,635 | 41,452 | 43,134 | 42,809 | 46,960 | 47,352 |
| Installed thermal - Nuclear (MW) | 3,797 | 3,797 | 3,797 | 3,797 | 3,797 | 3,797 | 2,920 |
| Installed renewables - Rooftop PV (MW) | 723 | 1,179 | 1,661 | 2,333 | 3,256 | 4,426 | 5,903 |
| Installed renewables - Solar - Base land use assumptions (MW) | 2,586 | 2,586 | 2,586 | 2,893 | 7,764 | 11,905 | 22,118 |
| Installed renewables - Offshore Wind - Base land use assumptions (MW) | 0 | 93.8 | 93.8 | 93.8 | 93.8 | 144 | 352 |

Table 71: REF scenario - PILLAR 2: Clean Electricity - Generation

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|-------|-------|-------|-------|--------|--------|--------|
| Solar - Base land use assumptions (GWh) | 6,248 | 6,248 | 6,248 | 6,888 | 16,859 | 25,329 | 46,066 |
| Wind - Base land use assumptions (GWh) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| OffshoreWind - Base land use assumptions (GWh) | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Table 72: REF scenario - PILLAR 6: Land sinks - Forests - REF only

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|---|-------|------|-------|------|------|------|-------|
| Business-as-usual carbon sink - Natural | -24.6 | | -13.3 | | | | -10.8 |
| uptake (Mt CO2e/y) | | | | | | | |
| Business-as-usual carbon sink - Retained | -2.53 | | -4.22 | | | | -4.44 |
| in Hardwood Products (Mt CO2e/y) | | | | | | | |
| Business-as-usual carbon sink - Total (Mt | -27.1 | | -17.5 | | | | -15.2 |
| CO2e/y) | | | | | | | |

Table 73: REF scenario - PILLAR 6: Land sinks - Forests

| Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|---|------|------|------|------|------|------|---------|
| Pregeneration (1000 tC02e/y) Carbon sink potential - Low - Avoid deforestation (1000 tC02e/y) Carbon sink potential - Low - Extend rotation length (1000 tC02e/y) -2. | | | | | | | | -665 |
| Carbon sink potential - Low - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Low - Reforest productivity (1000 tCO2e/y) Carbon sink potential - Low - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) | · | | | | | | | |
| Garbon sink potential - Low - Extend -2, | | | | | | | | -654 |
| Carbon sink potential - Low - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Low - Improve plantations (1000 tCO2e/y) Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Low - Reforest trees outside forests (1000 tCO2e/y) Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) | | | | | | | | |
| rotation length (1000 tCO2e/v) Carbon sink potential - Low - Improve plantations (1000 tCO2e/v) Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/v) Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/v) Carbon sink potential - Low - Reforest cropland (1000 tCO2e/v) Carbon sink potential - Low - Reforest pasture (1000 tCO2e/v) Carbon sink potential - Low - Restore productivity (1000 tCO2e/v) Carbon sink potential - Low - Restore productivity (1000 tCO2e/v) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/v) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/v) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/v) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/v) Carbon sink potential - Mid - Extend | | | | | | | | -2,380 |
| Carbon sink potential - Low - Improve plantations (1000 tC02e/y) Carbon sink potential - Low - Increase retention of HWP (1000 tC02e/y) Carbon sink potential - Low - Increase trees outside forests (1000 tC02e/y) Carbon sink potential - Low - Reforest cropland (1000 tC02e/y) Carbon sink potential - Low - Reforest pasture (1000 tC02e/y) Carbon sink potential - Low - Reforest pasture (1000 tC02e/y) Carbon sink potential - Low - Reforest productivity (1000 tC02e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tC02e/y) Carbon sink potential - Iow - All (not counting overlap) (1000 tC02e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tC02e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tC02e/y) Carbon sink potential - Mid - Extend rotation length (1000 tC02e/y) Carbon sink potential - Mid - Improve plantations (1000 tC02e/y) Carbon sink potential - Mid - Improve plantations (1000 tC02e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tC02e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest productivity (1000 tC02e/y) Carbon sink potential - Mid - Reforest productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) | | | | | | | | , |
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| Carbon sink potential - Low - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Low - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend -4 rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not -25 | | | | | | | | • |
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| Carbon sink potential - Low - Increase trees outside forests (1000 tC02e/y) Carbon sink potential - Low - Reforest cropland (1000 tC02e/y) Carbon sink potential - Low - Reforest pasture (1000 tC02e/y) Carbon sink potential - Low - Restore productivity (1000 tC02e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tC02e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tC02e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tC02e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tC02e/y) Carbon sink potential - Mid - Extend rotation length (1000 tC02e/y) Carbon sink potential - Mid - Improve plantations (1000 tC02e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tC02e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) | | | | | | | | -, |
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| Carbon sink potential - Low - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) Carbon sink potential - Mid - Reforest plantations (1000 tCO2e/y) | | | | | | | | |
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| Carbon sink potential - Low - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Reforest poductivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not | · | | | | | | | 201 |
| pasture (1000 tCO2e/y) Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Reforest trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not | | | | | | | | -613 |
| Carbon sink potential - Low - Restore productivity (1000 tCO2e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not | | | | | | | | 010 |
| productivity (1000 tCO2e/y) Carbon sink potential - Low - All (not counting overlap) (1000 tCO2e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not - 25 | | | | | | | | -1,612 |
| Carbon sink potential - Low - All (not counting overlap) (1000 tC02e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tC02e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tC02e/y) Carbon sink potential - Mid - Extend rotation length (1000 tC02e/y) Carbon sink potential - Mid - Improve plantations (1000 tC02e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tC02e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Reforest posture (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not | | | | | | | | 1,012 |
| counting overlap) (1000 tC02e/y) Carbon sink potential - Mid - Accelerate regeneration (1000 tC02e/y) Carbon sink potential - Mid - Avoid - 2, deforestation (1000 tC02e/y) Carbon sink potential - Mid - Extend rotation length (1000 tC02e/y) Carbon sink potential - Mid - Improve plantations (1000 tC02e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tC02e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not -25 | | | | | | | | -11,529 |
| Carbon sink potential - Mid - Accelerate regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not | | | | | | | | -11,327 |
| regeneration (1000 tCO2e/y) Carbon sink potential - Mid - Avoid deforestation (1000 tCO2e/y) Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not | | | | | | | | -997 |
| Carbon sink potential - Mid - Avoid deforestation (1000 tC02e/y) Carbon sink potential - Mid - Extend rotation length (1000 tC02e/y) Carbon sink potential - Mid - Improve plantations (1000 tC02e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tC02e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not | · | | | | | | | -771 |
| deforestation (1000 tC02e/y) Carbon sink potential - Mid - Extend rotation length (1000 tC02e/y) Carbon sink potential - Mid - Improve plantations (1000 tC02e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tC02e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not | | | | | | | | -2,289 |
| Carbon sink potential - Mid - Extend rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not | • | | | | | | | -2,209 |
| rotation length (1000 tCO2e/y) Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not -25 | | | | | | | | -4,287 |
| Carbon sink potential - Mid - Improve plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not -25 | | | | | | | | -4,201 |
| plantations (1000 tCO2e/y) Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not - 25 | | | | | | | | 0.007 |
| Carbon sink potential - Mid - Increase retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not | · | | | | | | | -2,827 |
| retention of HWP (1000 tCO2e/y) Carbon sink potential - Mid - Increase trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not -25 | | | | | | | | / 000 |
| Carbon sink potential - Mid - Increase trees outside forests (1000 tC02e/y) Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not | | | | | | | | -6,203 |
| trees outside forests (1000 tCO2e/y) Carbon sink potential - Mid - Reforest cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not | | | | | | | | |
| Carbon sink potential - Mid - Reforest cropland (1000 tC02e/y) Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not | · | | | | | | | -664 |
| cropland (1000 tCO2e/y) Carbon sink potential - Mid - Reforest pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not -25 | | | | | | | | 0.1.6 |
| Carbon sink potential - Mid - Reforest pasture (1000 tC02e/y) Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not | · | | | | | | | -346 |
| pasture (1000 tCO2e/y) Carbon sink potential - Mid - Restore productivity (1000 tCO2e/y) Carbon sink potential - Mid - All (not -25 | | | | | | | | |
| Carbon sink potential - Mid - Restore productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not -25 | · | | | | | | | -4,354 |
| productivity (1000 tC02e/y) Carbon sink potential - Mid - All (not -25 | | | | | | | | |
| Carbon sink potential - Mid - All (not | · | | | | | | | -3,196 |
| | | | | | | | | |
| counting overlap) (1000 tCO2e/y) | | | | | | | | -25,162 |
| | | | | | | | | |
| | | T | T | T | T | | T | -1,328 |
| regeneration (1000 tCO2e/y) | • ,, | | | | | | | |
| | | | | | | | | -3,923 |
| deforestation (1000 tC02e/y) | • | | | | | | | |
| Carbon sink potential - High - Extend6 | Carbon sink potential - High - Extend | | | | | | | -6,195 |
| rotation length (1000 tCO2e/y) | | | | | | | | |
| | | | | | | | | -3,791 |
| plantations (1000 tCO2e/y) | plantations (1000 tCO2e/y) | | | | | | | |

Table 73: REF scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|---------|
| Carbon sink potential - High - Increase | | | | | | | -9,304 |
| retention of HWP (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Increase | | | | | | | -983 |
| trees outside forests (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -462 |
| cropland (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Reforest | | | | | | | -8,095 |
| pasture (1000 tC02e/y) | | | | | | | |
| Carbon sink potential - High - All (not | | | | | | | -38,862 |
| counting overlap) (1000 tCO2e/y) | | | | | | | |
| Carbon sink potential - High - Restore | | | | | | | -4,781 |
| productivity (1000 tCO2e/y) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 109 |
| Low - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 499 |
| Low - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,210 |
| Low - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 698 |
| Low - Improve plantations (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 0 |
| Low - Increase retention of HWP (1000 | | | | | | | ŭ |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 49.2 |
| Low - Increase trees outside forests | | | | | | | 47.2 |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 15.3 |
| | | | | | | | 15.5 |
| Low - Reforest cropland (1000 hectares) | | | | | | | 000 |
| Land impacted for carbon sink potential - | | | | | | | 39.9 |
| Low - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 959 |
| Low - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,579 |
| Low - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 163 |
| Mid - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 515 |
| Mid - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 2,185 |
| Mid - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,051 |
| 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 - | | | | | | | 71.3 |
| Mid - Increase trees outside forests (1000 | | | | | | | 11.3 |
| hectares) | | | | | | | |
| | | | | | | | 00.0 |
| Land impacted for carbon sink potential - | | | | | | | 22.9 |
| Mid - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 288 |
| Mid - Reforest pasture (1000 hectares) | | | | | | | |

Table 73: REF scenario - PILLAR 6: Land sinks - Forests (continued)

| Item | 2020 | 2025 | 2030 | 2035 | 2040 | 2045 | 2050 |
|--|------|------|------|------|------|------|-------|
| Land impacted for carbon sink potential - | | | | | | | 1,931 |
| Mid - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 6,227 |
| Mid - Total impacted (over 30 years) (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 217 |
| High - Accelerate regeneration (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 531 |
| High - Avoid deforestation (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 3,159 |
| High - Extend rotation length (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,397 |
| 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 - | | | | | | | 93.4 |
| High - Increase trees outside forests | | | | | | | |
| (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 30.5 |
| High - Reforest cropland (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 230 |
| High - Reforest pasture (1000 hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 1,585 |
| High - Restore productivity (1000 | | | | | | | |
| hectares) | | | | | | | |
| Land impacted for carbon sink potential - | | | | | | | 7,243 |
| High - Total impacted (over 30 years) | | | | | | | |
| (1000 hectares) | | | | | | | |