Summary of GHG Emissions for New Zealand

Base year (Convention) = 1990

<table>
<thead>
<tr>
<th></th>
<th>Base year</th>
<th>2000</th>
<th>Last Inventory Year (2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ emissions</td>
<td>25,502.5</td>
<td>32,245.5</td>
<td>34,218.8</td>
</tr>
<tr>
<td>CO₂ net emissions/ removals by LULUCF</td>
<td>26,586.2</td>
<td>27,287.5</td>
<td>27,368.2</td>
</tr>
<tr>
<td>CO₂ net emissions/ removals with LULUCF</td>
<td>4,937.3</td>
<td>4,976.3</td>
<td>12,959.1</td>
</tr>
<tr>
<td>GHG emissions</td>
<td>64,720.1</td>
<td>74,850.6</td>
<td>76,824.6</td>
</tr>
<tr>
<td>GHG net emissions/ removals by LULUCF</td>
<td>26,177.2</td>
<td>26,789.0</td>
<td>21,578.2</td>
</tr>
<tr>
<td>GHG net emissions/ removals with LULUCF</td>
<td>44,548.8</td>
<td>48,061.5</td>
<td>55,246.4</td>
</tr>
<tr>
<td>Indirect CO₂</td>
<td>NO,NE</td>
<td>NO,NE</td>
<td>NO,NE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>From Base year to 2000</th>
<th>From 2000 to Last Inventory Year (2021)</th>
<th>From Base year to Last Inventory Year (2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ emissions</td>
<td>26.44%</td>
<td>8.43%</td>
<td>34.57%</td>
</tr>
<tr>
<td>CO₂ net emissions/ removals by LULUCF</td>
<td>32.59%</td>
<td>21.67%</td>
<td>3.66%</td>
</tr>
<tr>
<td>CO₂ net emissions/ removals with LULUCF</td>
<td>9.82%</td>
<td>190.34%</td>
<td>162.49%</td>
</tr>
<tr>
<td>GHG emissions</td>
<td>15.65%</td>
<td>2.64%</td>
<td>18.70%</td>
</tr>
<tr>
<td>GHG net emissions/ removals by LULUCF</td>
<td>32.81%</td>
<td>21.32%</td>
<td>4.56%</td>
</tr>
<tr>
<td>GHG net emissions/ removals with LULUCF</td>
<td>7.88%</td>
<td>19.99%</td>
<td>26.14%</td>
</tr>
</tbody>
</table>

Average annual growth rates, in percent per year

<table>
<thead>
<tr>
<th></th>
<th>From Base year to 2000</th>
<th>From 2000 to Last Inventory Year (2021)</th>
<th>From Base year to Last Inventory Year (2021)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ emissions</td>
<td>3.37%</td>
<td>0.30%</td>
<td>0.12%</td>
</tr>
<tr>
<td>CO₂ net emissions/ removals by LULUCF</td>
<td>2.86%</td>
<td>-1.16%</td>
<td>0.26%</td>
</tr>
<tr>
<td>CO₂ net emissions/ removals with LULUCF</td>
<td>0.26%</td>
<td>4.66%</td>
<td>3.16%</td>
</tr>
<tr>
<td>GHG emissions</td>
<td>1.46%</td>
<td>0.12%</td>
<td>0.05%</td>
</tr>
<tr>
<td>GHG net emissions/ removals by LULUCF</td>
<td>2.88%</td>
<td>-1.14%</td>
<td>0.14%</td>
</tr>
<tr>
<td>GHG net emissions/ removals with LULUCF</td>
<td>0.06%</td>
<td>0.01%</td>
<td>0.06%</td>
</tr>
</tbody>
</table>

Change in GHG emissions/removals from 1990 to 2021

<table>
<thead>
<tr>
<th>Sector</th>
<th>1990 (without LULUCF)</th>
<th>2021 (without LULUCF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Energy</td>
<td>-8.1%</td>
<td>10.69%</td>
</tr>
<tr>
<td>1.A.1. Energy industries</td>
<td>32.46%</td>
<td>26.86%</td>
</tr>
<tr>
<td>1.A.2. Manufacturing Industries and Construction</td>
<td>0.00%</td>
<td>28.76%</td>
</tr>
<tr>
<td>1.A.3. Transport</td>
<td>-22.2%</td>
<td>13.43%</td>
</tr>
<tr>
<td>1.A.4. Other sectors</td>
<td>-18.5%</td>
<td>4.50%</td>
</tr>
<tr>
<td>1.A.5. Other (not specified elsewhere)</td>
<td>-8.1%</td>
<td>-18.5%</td>
</tr>
<tr>
<td>1.B. Fugitive Emissions from Fuels</td>
<td>-22.2%</td>
<td>13.43%</td>
</tr>
<tr>
<td>1.C. CO2 Transport and Storage</td>
<td>-18.5%</td>
<td>4.50%</td>
</tr>
<tr>
<td>2. Industrial Processes and Product Use</td>
<td>30.69%</td>
<td>19.37%</td>
</tr>
<tr>
<td>3. Agriculture</td>
<td>32.46%</td>
<td>70.51%</td>
</tr>
<tr>
<td>4. LULUCF</td>
<td>0.00%</td>
<td>0.00%</td>
</tr>
<tr>
<td>5. Waste</td>
<td>-22.2%</td>
<td>22.22%</td>
</tr>
<tr>
<td>6. Other</td>
<td>0.00%</td>
<td>20%</td>
</tr>
</tbody>
</table>

GHG emissions by gas

1990 (without LULUCF)
- CO₂: 39.40%
- CH₄: 50.34%
- N₂O: 8.82%
- Aggregate F-gases: 1.44%

2021 (without LULUCF)
- CO₂: 44.67%
- CH₄: 42.98%
- N₂O: 10.33%
- Aggregate F-gases: 2.02%

1990 (with LULUCF)
- CO₂: 11.08%
- CH₄: 73.29%
- N₂O: 13.54%
- Aggregate F-gases: 2.09%

2021 (with LULUCF)
- CO₂: 23.25%
- CH₄: 59.29%
- N₂O: 14.68%
- Aggregate F-gases: 2.78%

GHG emissions by sector (without LULUCF)

1990
- Energy: 36.90%
- Industrial Processes and Product Use: 5.53%
- Agriculture: 51.47%
- Waste: 6.09%
- Other: 0.00%

2021
- Energy: 40.63%
- Industrial Processes and Product Use: 6.00%
- Agriculture: 49.18%
- Waste: 4.18%
- Other: 0.00%
### Breakdown of GHG emissions within the energy sector

#### 1990
- **1.A.1. Energy industries**: 25.07%
- **1.A.2. Manufacturing Industries and Construction**: 19.92%
- **1.A.3. Transport**: 34.03%
- **1.A.4. Other sectors**: 14.98%
- **1.A.5. Other (not specified elsewhere)**: 0.00%
- **1.B. Fugitive Emissions from Fuels**: 5.99%
- **1.C. CO2 Transport and Storage**: 0.00%

#### 2021
- **1.A.1. Energy industries**: 17.30%
- **1.A.2. Manufacturing Industries and Construction**: 20.13%
- **1.A.3. Transport**: 44.46%
- **1.A.4. Other sectors**: 14.54%
- **1.A.5. Other (not specified elsewhere)**: 0.00%
- **1.B. Fugitive Emissions from Fuels**: 3.57%
- **1.C. CO2 Transport and Storage**: 0.00%

### Breakdown of GHG emissions within the industrial processes and product use sector

#### 1990
- **2.A. Mineral Products**: 15.69%
- **2.B. Chemical Industry**: 5.67%
- **2.C. Metal Production**: 74.59%
- **2.D. Non-energy Products from Fuels and Solvent Use**: 0.70%
- **2.E. Electronics industry**: 0.00%
- **2.F. Product Uses as Substitutes for ODS**: 0.00%
- **2.G. Other Product Manufacture and Use**: 3.34%
- **2.H. Other**: 0.00%

#### 2021
- **2.A. Mineral Products**: 11.48%
- **2.B. Chemical Industry**: 3.02%
- **2.C. Metal Production**: 50.13%
- **2.D. Non-energy Products from Fuels and Solvent Use**: 0.92%
- **2.E. Electronics industry**: 0.00%
- **2.F. Product Uses as Substitutes for ODS**: 32.17%
- **2.G. Other Product Manufacture and Use**: 2.28%
- **2.H. Other**: 0.00%

### Breakdown of GHG emissions within the agriculture sector

#### 1990
- **3.A. Enteric Fermentation**: 80.93%
- **3.B. Manure management**: 2.32%
- **3.C. Rice cultivation**: 0.00%
- **3.D. Agricultural Soils**: 15.66%
- **3.E. Prescribed Burning of Savannas**: 0.00%
- **3.F. Field Burning of Agricultural Residues**: 0.08%
- **3.G. Liming**: 0.89%
- **3.H. Urea Application**: 0.12%
- **3.I. Other Carbon-containing Fertilizers**: 0.00%

#### 2021
- **3.A. Enteric Fermentation**: 73.73%
- **3.B. Manure management**: 4.45%
- **3.C. Rice cultivation**: 0.00%
- **3.D. Agricultural Soils**: 19.36%
- **3.E. Prescribed Burning of Savannas**: 0.00%
- **3.F. Field Burning of Agricultural Residues**: 0.08%
- **3.G. Liming**: 0.94%
- **3.H. Urea Application**: 1.46%
- **3.I. Other Carbon-containing Fertilizers**: 0.00%
Breakdown of GHG emissions/removals within the LULUCF sector (kt CO₂ equivalent)

**1990**
- 4.A. Forest Land: -19,046.2
- 4.B. Cropland: 476.5
- 4.C. Grassland: 756.8
- 4.D. Wetlands: -8.4
- 4.E. Settlements: 75.7
- 4.F. Other Land: 11.4
- 4.G. Harvested Wood Products: 13.8
- 4.H. Other: 122.2

**2021**
- 4.B. Cropland: 378.3
- 4.C. Grassland: 2,744.3
- 4.D. Wetlands: 11.4
- 4.E. Settlements: 122.2
- 4.F. Other Land: 85.7
- 4.G. Harvested Wood Products: 0.0
- 4.H. Other: 0.0

Breakdown of GHG emissions within the waste sector

**1990**
- S.A. Solid Waste Disposal - 84.12%
- S.B. Biological Treatment of Solid Waste - 0.12%
- S.C. Incineration and Open Burning of Waste - 8.00%
- S.D. Wastewater Treatment and Discharge - 7.76%
- S.E. Other - 0.00%

**2021**
- S.A. Solid Waste Disposal - 80.19%
- S.B. Biological Treatment of Solid Waste - 2.24%
- S.C. Incineration and Open Burning of Waste - 5.82%
- S.D. Wastewater Treatment and Discharge - 11.75%
- S.E. Other - 0.00%