

Incorporating world leading science in NZ's national greenhouse gas inventory

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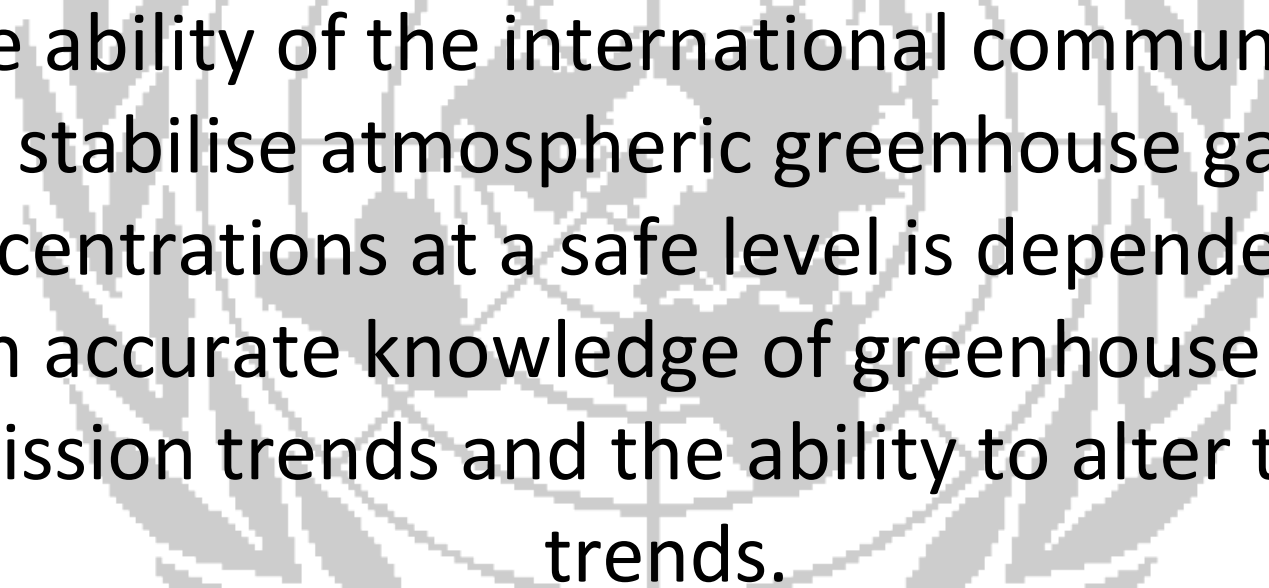
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Content

- Mandate
- Expert reviews
- Policy & science networks
- Peer review
- DCD case study



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The ability of the international community to stabilise atmospheric greenhouse gas concentrations at a safe level is dependent on an accurate knowledge of greenhouse gas emission trends and the ability to alter these trends.



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Methodologies

- UNFCCC reporting Guidelines
- Revised 1996 IPCC Guidelines
- IPCC Good Practice Guidance
- 2006 IPCC Guidelines



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IPCC Principals

- Transparency
- Accuracy
- Completeness
- Comparability
- Consistency



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National System

- Institutional arrangements
- QA/QC
- Resourcing
- Single national entity
- Documentation & archiving



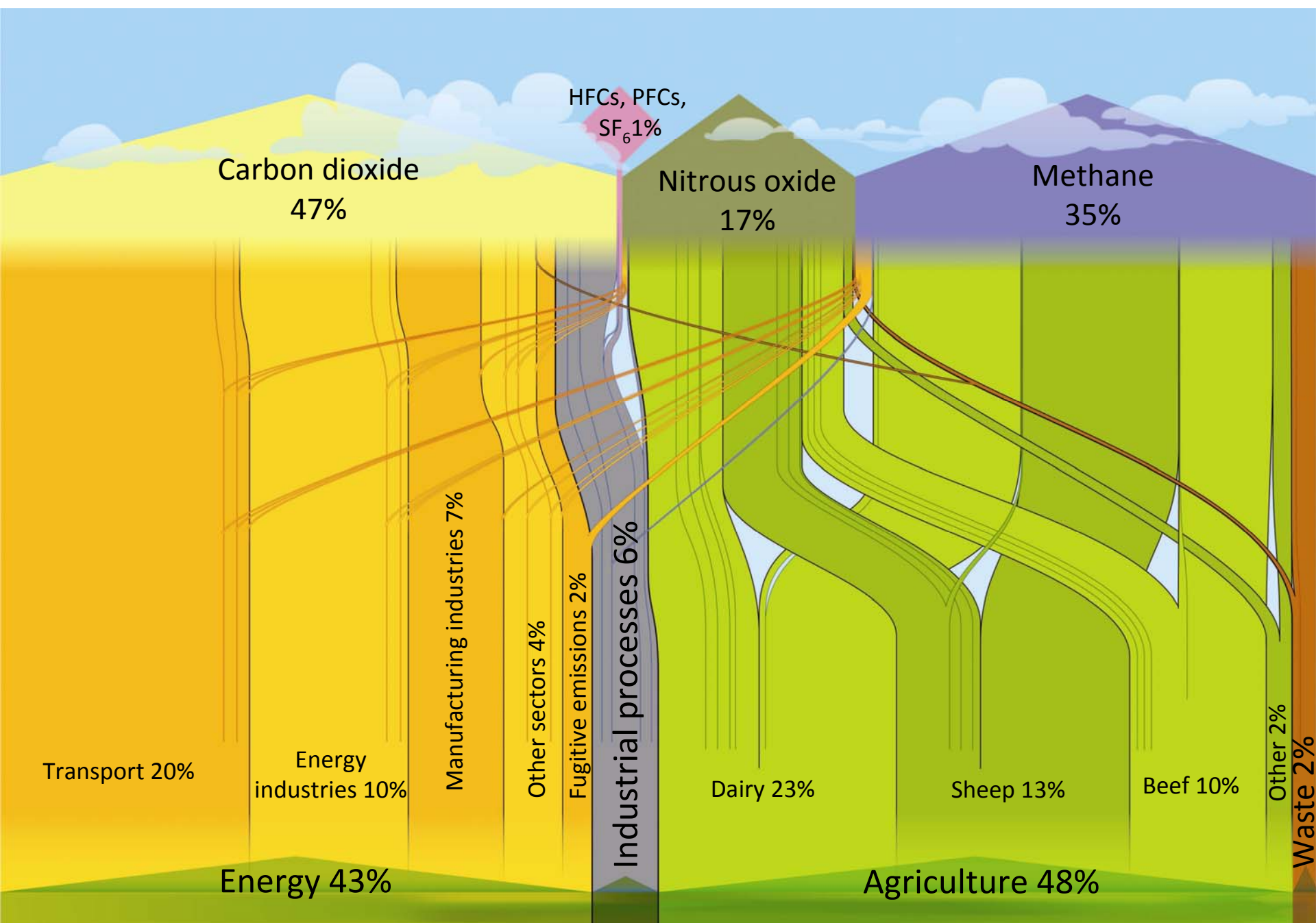
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UNFCCC Review Process

1. Initial check
2. Synthesis & assessment
3. Individual review
 - *Centralised*
 - *In-country*



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NZ's Distributed System

- MfE is the national inventory agency
 - *LULUCF*
 - *Waste*
 - *Non-CO₂ industrial processes & solvents*
- MAF compiles the agriculture inventory
- MED – energy & CO₂ from industrial processes



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- MAF is responsible for calculating the agricultural sector of the National Greenhouse Gas Inventory
- To meet UNFCCC requirements continual inventory improvement is required to meet 'good practice'
- Inventory calculations are improved through improving the methodology, scientific knowledge & data behind the calculations
 - e.g. DCD - mitigation technology for N₂O from agricultural soils.



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Research Networks

- Two expert research networks to assist in research priority identification - Methanet and NzOnet
 - Two groups of scientists with research interests in agricultural CH₄ & N₂O production
 - Members from across the CRIs, e.g. AgResearch, NIWA, Landcare, Plant and Food, universities, private sector and government.



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MAF Funding

- MAF's national GHG reporting and forecasting work program
 - Funding for external research into agricultural emissions in NZ
 - Research focus determined each year in consultation with Methanet and NzOnet.
 - Reports commissioned and reviewed



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Other Funding

- PGGRC
 - Safe, cost effective greenhouse gas abatement technologies
 - Industry and Crown (FRST) funded projects
 - Personal attend Methanet and NzOnet workshops
 - 7 main areas for research projects



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Centre Research Focus

- GHG mitigation research related to the pastoral, arable, horticulture, poultry & pig sectors including:
 - CH_4 from ruminant animals & waste systems,
 - N_2O from ruminant animals & nitrogen fertiliser,
 - soil carbon in agriculture & horticulture
- Will not include planted forestry, energy, or biofuels



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Inventory Change Process

- Research
- Report
- Review
- Incorporation
 - Recalculations if required
 - Inventory Change Panel
 - MfE change form
 - MAF advises MfE



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Improvements

- Country specific emission factors changed to date
 - $\text{Frac}_{\text{leach}}$, EF_1 , $\text{EF}_{3\text{PR\&P}}$
 - Future changes $\text{Frac}_{\text{gasm}}$, $\text{Frac}_{\text{gasf}}$
- Methodology
 - Tier 2 inventory model
 - Future changes - regionalisation of dairy
- Mitigation - example in agriculture of a mitigation incorporation into the national inventory
 - DCD



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Measuring N₂O



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DCD - Research

- Identified as a potential mitigation technology - Lincoln University
- Extensive national research programme
- Industry & government funded research
- Research has covered - timing, rates, form, locations, environmental influence, impacts, persistence



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DCD - Report

- MAF review
 - Reviews literature
 - Assesses incorporation of DCD into Inventory
 - Recommends percentage reductions to $EF_{3PR\&P}$
 - Recommends data required
 - Investigates influence on potentially affected emission factors
 - Investigates Pro's and Con's
 - Future improvements



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DCD - Review

- International peer reviewed
- Reviewer notes on
 - If scientifically defensible
 - Consistent with IPCC good practice guidance
 - Recommends for inclusion/change or not
 - Any suggested extra research
 - Fills in change form for MfE



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Incorporation

- Recalculations if required back to 1990
 - UNFCCC requires consistent methodology
 - Recalculation forms for MfE for approval
- Inventory Change Panel
 - New Panel set up this year
 - Independent
 - Advises deputy DG-MAF on scientific robustness of proposed changes



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Acceptance

- Wait to see if accepted in UNFCCC Inventory review
 - Reviewed on an annual basis and therefore can be challenged annually
 - Any changes can be not accepted right up until 2015 submission (end of CP1)



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THANK YOU



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