



Ministry for the
Environment
Manatu Mō Te Taiao

Accounting choices for CCRA Budgets and NDCs

5 May 2021, 3.30-4.30pm

Proactively released

What will be covered today

The main focus of this discussion is accounting choices going forward for CCRA Budgets and NDC1 in terms of target-accounting vs reporting-based budgets

- **Background: what is “accounting”?**
- **Other NDC accounting elements (not the focus today)**
- **The Past: Kyoto Protocol accounting**
- **The Present: reporting & target accounting net emissions; NZ’s current situation**
- **The Future: Accounting and the Paris Agreement; Example – two NDCs;**
- **Possible Implementation & timing consequences**

Note: the content of this slide deck has not been tested with other agencies, e.g. international aspects will need to be addressed. This constitutes a preliminary discussion and not advice. Decisions are not sought at this session.

Proposed objectives for the session

- 1. Ensure we are clear about your key questions and concerns about different accounting approaches**
- 2. Explain the context for the current accounting approaches and their strengths and weaknesses**
- 3. Explore options to resolve any remaining questions and concerns ahead of updating NDC1**

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Background: what is “accounting” ?

Under the Paris Agreement

- “Accounting” = methodological approaches to setting/defining, monitoring progress, and assessing NDC achievement.
- Choices about accounting cannot be made independently from the NDC target: together these deliver on the nationally-determined level of ambition.
- Under the Paris Agreement Parties must use IPCC methodologies, strive to include all categories of emissions and removals in the NDC, and if any are excluded, explain why.
- For GHG NDC targets, typically:
 - gross emissions (inventory) + land sector emissions/removals (nationally-specified approach) + Article 6.

Accounting approaches seek to serve multiple objectives

No single approach is best to meet all objectives. The Climate Change Commission’s draft advice proposes NZ aim for ***A robust, transparent accounting system that tracks genuine environmental gains while balancing completeness with practicality.*** It proposes that accounting for emissions Budgets and the 2050 target should:

- seek to cover all material human caused emissions sources and sinks;*
- be grounded in robust science and evidence;*
- send a clear signal for climate action;*
- be accurate and reduce uncertainty as far as practicable;*
- be transparent, practical and acceptable; and*
- be consistent and maintain the integrity of the target.*

Other NDC accounting aspects

NDC1 target type: Budget for 2021-30 vs Single-year target in 2030

- New Zealand's current NDC1 requires more emission reductions than a single-year 2030 target of the same headline reduction.
- A single-year target would make managing international cooperation more difficult.
- Switzerland and Australia are currently the only other Parties with NDCs managed as a budget

Methodology for defining NDC budget quantity

- Different methodologies can be applied to calculate the budget quantity. These either impact ambition (requiring more/less action for a given headline target) or for a given level of ambition, they change the resulting headline target.
 - Kyoto Protocol formula (not used by any other Parties)
 - Climate Change Commission's simplified method (also used in Switzerland and Australia's NDCs).
 - We could explore an option of starting an NDC Budget from actual emission levels instead of the previous 2020 target.
- The option chosen has implications for how successive NDC budgets link, and how quickly future NDCs could align with domestic emissions

Other technical decisions

- Use of global warming potential (GWP) values from the IPCC's fifth assessment report (AR5) is mandatory for Paris Agreement inventory reporting; we propose to also use these for accounting for CCRA Budgets and the NDC. The Commission intends to update to AR5 values in its final advice.
- Whether to "fix" the budget quantity, or allow this to be updated for methodological updates in the inventory
- Other details of land sector accounting e.g. treatment of Harvested Wood Products, Natural Disturbances, additional pools

The Past: Kyoto Protocol accounting



- Goal was greater action, particularly by developed countries, through binding targets and an accounting framework to ensure their achievement.
- Targets are referenced to a 1990 base year for gross emissions, then a subset of removals for the land sector can offset gross emissions, factoring out pre-existing activities (i.e. those that would have happened anyway). The objective of this “factoring out” (i.e. gross-net accounting) was to
 1. focus on incentives for change that we can influence, on the basis that over the long term the lowest total (reporting) net emissions will result from providing incentives that maximise action.
 2. Provide a fairer comparison between countries that were deforesting in 1990, and those that had removals.

e.g. consider Country A (deforesting in 1990) and Country Z (significant sequestration in 1990 due to past planting) with identical targets. In a “net-net” approach, A would be allowed to continue deforesting at the same rate and would achieve the same net-net target as Country Z that would have to continue planting more forests to achieve the same net-net target. In the context of an agreement based around reduction targets, factoring out pre-existing activities was seen as fairer as this focuses on additional measures taken since a base year.

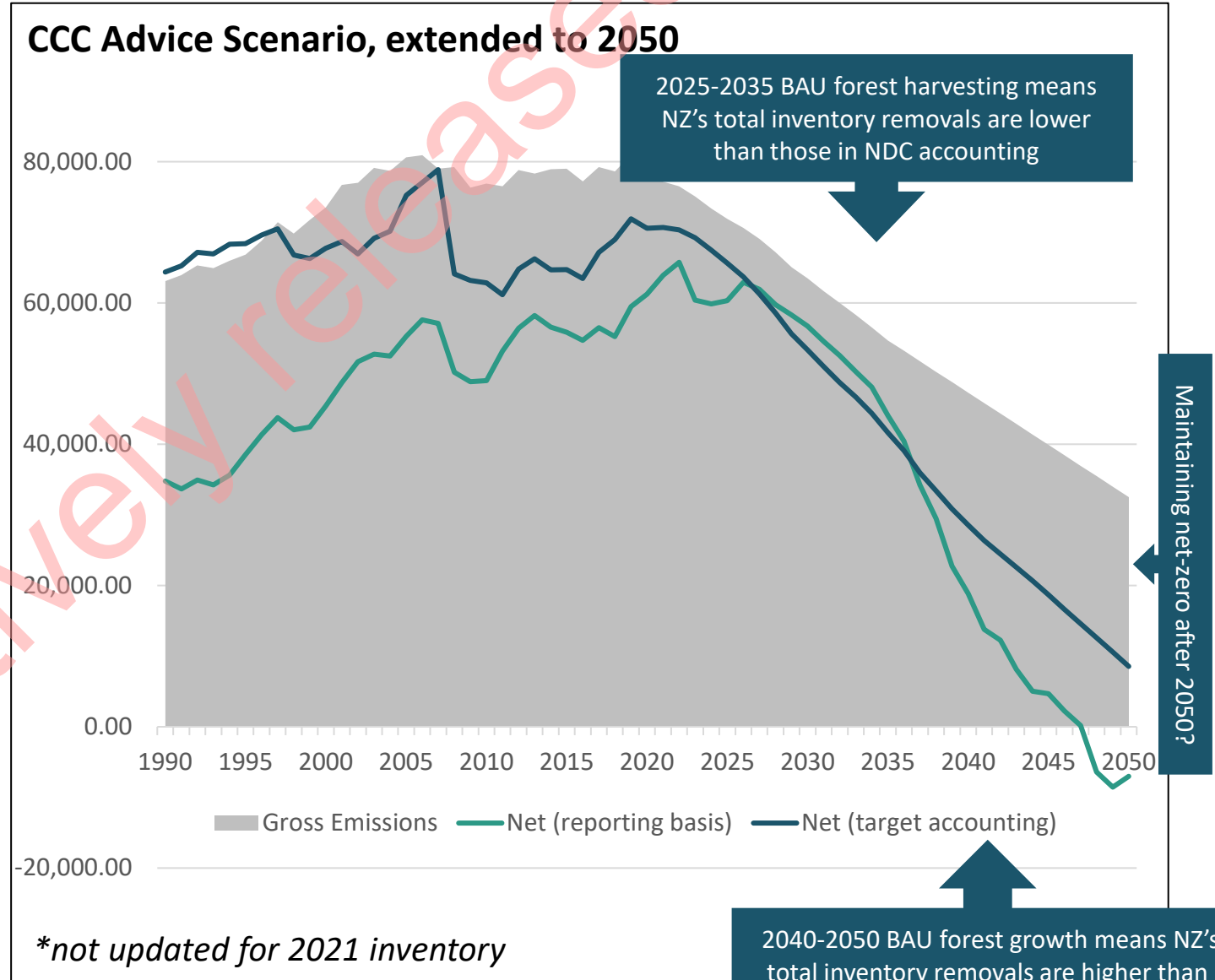
The Present: reporting & target accounting net emissions

Inventory reporting

- Includes all removals from the atmosphere
 - Difference vs NDC accounting is mostly harvest/regrowth of pre-1990 forests.
 - Also includes some pools (grasslands, wetlands) not yet included in target accounting due to data availability and because this was not required under the KP.
- Large BAU cycles dominate the trends, but at all stages there are still removals (just more or less)
- Numbers can change significantly at annual inventory updates/improvements (& will change more in the future)

Current NDC accounting

- uses a subset of land sector emissions and removals, associated with post-1990 activities only
- uses averaging to smooth cycles in plantation forestry, so that BAU changes do not distort incentives for emission reductions
- uses forest management reference level for pre-1990.
- intended to provide incentive for, and show results of, actions since 1990 to increase removals.



The Present: NZ's current situation

Reporting

- NZ's annual national greenhouse gas inventory report includes
 - 1) all emission and removals
 - 2) the subset of removals (as per the Kyoto Protocol model) used for NZ's 2013-2020 target accounting

Accounting: where gross-net methodology is currently used in New Zealand climate targets and policies

- NDC1 communicated to the UNFCCC as gross-net and “averaging” for post-1990 forests. NZ reserved the right to adjust this methodology without reducing ambition.
- Multi-year work programme (MfE LUCAS, MPI) underway to support New Zealand's NDC1 accounting. Sufficiently detailed country-specific information is gathered (the national inventory uses simpler UNFCCC default factors in some parts) + integration into the LUCAS model.
- Modelling that informed the 2050 long-lived gases target in the CCRA.
- Climate Change Commission's modelling and draft advice on emissions budgets and the NDC.
- Averaging in ETS forestry settings was in part to align the ETS better with the NDC accounting approach.
- ETS auction volumes are calculated starting from net emissions budgets set on a gross-net target accounting basis.
- Gross-net accounting is used in our 2013-2020 target outside the Kyoto Protocol (final accounting in 2022, once the 2020 inventory is available).

The Future: accounting and the Paris Agreement

Selected countries' accounting approaches for their first NDCs (details vary) :

Version of gross-net	Version of net-net
Most Kyoto Protocol participants, i.e. <ul style="list-style-type: none"> - EU - Switzerland - Japan* - Canada* - NZ* *updated NDC yet to be filed with UNFCCC	<ul style="list-style-type: none"> - USA - Australia - UK - Many developing countries

Looking to 2050 and beyond provides further perspectives:

- The Paris Agreement **“balance between anthropogenic emissions by sources and removals by sinks of greenhouse gases in the second half of this century”** is more intuitively understood through full inventory-based accounting.
- An increasing number of countries have national net-zero targets – the meaning of “net zero” is not always specified. Globally, net CO₂ emissions reach zero around 2050 in 1.5°C pathways, but GHG emissions only around 2070.
- For New Zealand, reaching net-zero long-lived gases in 2050 is more challenging in a target accounting approach than a reporting approach (it requires more action to meet the given headline target level)

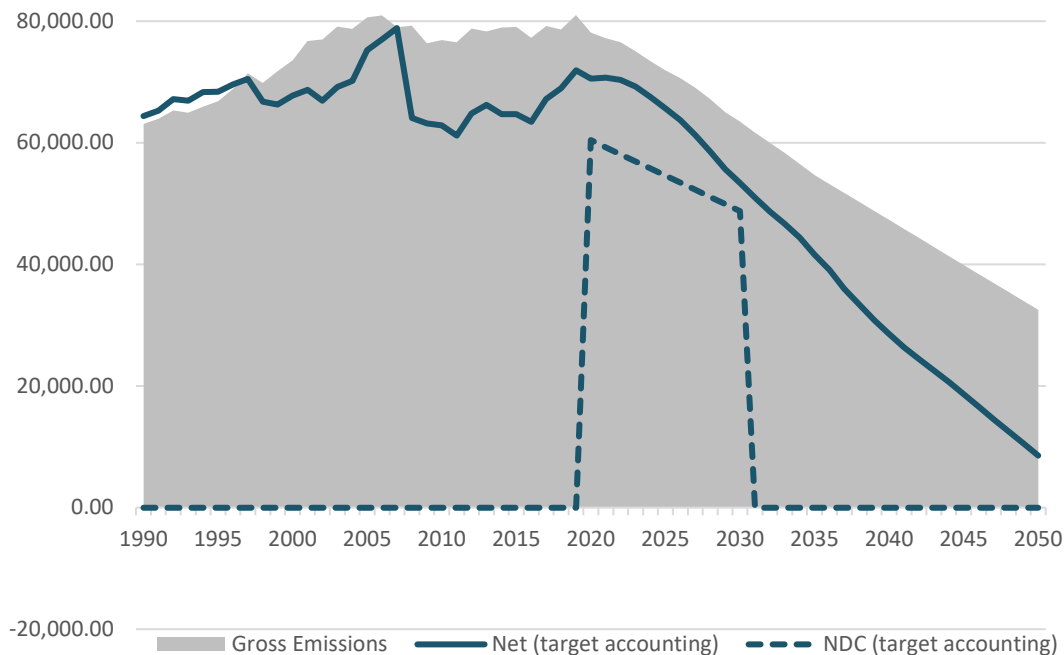
Example – how does accounting affect the NDC narrative?

Consider two equivalent-effort/ambition NDCs, expressed in target accounting & inventory reporting basis

- These scenarios are PURELY ILLUSTRATIVE to show how accounting approaches affect NDC interpretation, and do not constitute advice on the NDC or emissions budgets.
- Each of the two scenarios has THE SAME
 - domestic gross emissions (Commission’s draft advice scenario to 2035, extended to 2050)
 - level of forestry planting (MPI central scenario)
 - quantity of additional emission reductions from international cooperation (around 90Mt over 2021-2030)
- The narrative changes substantially in the short (to 2035) and long (2050) term. This does not represent more or less “ambition”: it is the same level of action expressed in a different metric.

NOTE: numbers will shift when updated projections (incorporating recent inventory methodology updates) are available, and update to AR5 GWPs is undertaken. The trajectories in these graphs use pre-update scenarios and do not include the recent inventory update.

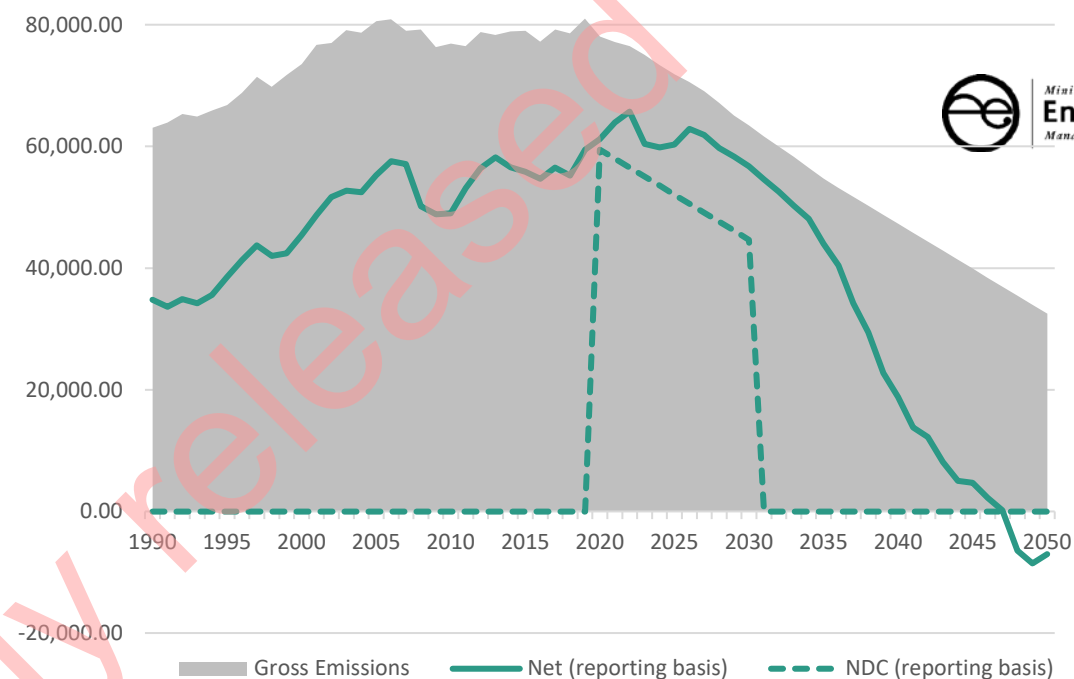
Target Accounting Basis NDC



- Steady fall in gross and net emissions
- Net emission reductions exceed CCRA split gas target in 2050
- Net-zero CO₂ by 2040
- Reductions 2030 vs 2005:
 - CH₄ and N₂O follow CCC advice path
 - Gross-net CO₂ ~65% reduction (incl. offshore mitigation)
 - All gases ~40% reduction vs 2005 gross-net

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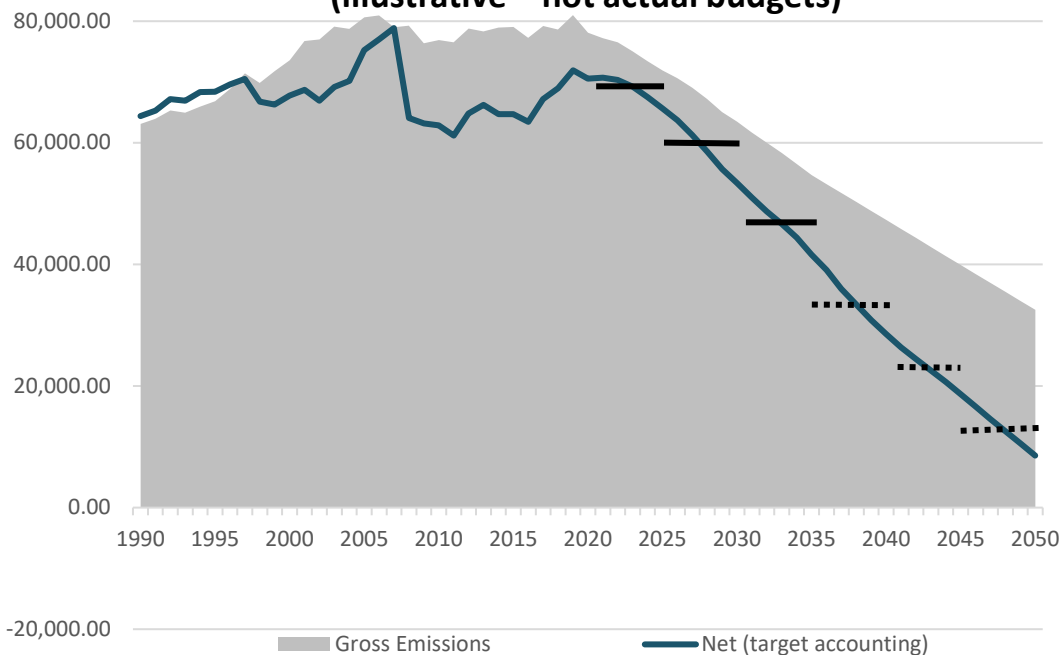
Inventory Reporting Basis NDC



- Steady fall in gross emissions
- BAU forestry cycles affect progress in net emissions (slower to 2035, then drop rapidly). Outcome highly sensitive to year-to-year forestry activity (i.e. harvest and planting choices)
- Net-zero CO₂ by 2040
- Reaches net-zero all gases before 2050 (but rebounds after 2050)
- Reductions 2030 vs 2019 (most recent inventory):
 - CH₄ and N₂O follow CCC advice path
 - Net-net CO₂ ~50% reduction (incl. offshore mitigation)
 - All gases ~25% reduction vs 2019 net-net

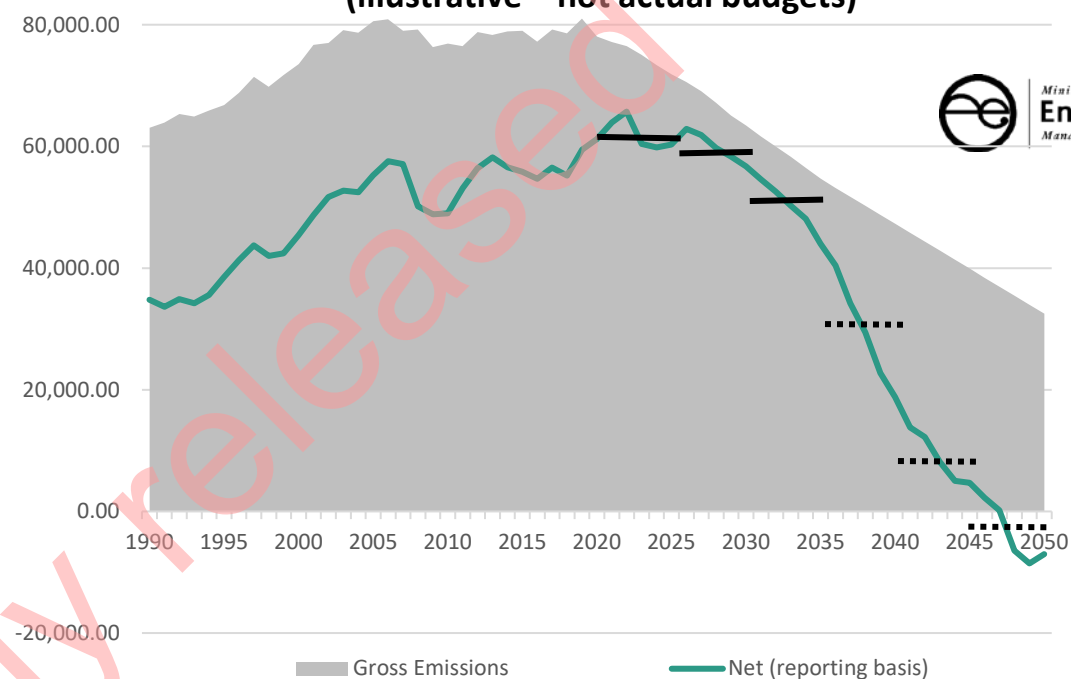
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Target Accounting Basis Domestic Budgets
(illustrative – not actual budgets)



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Inventory Reporting Basis Domestic Budgets
(illustrative – not actual budgets)



Domestic CCRA Budgets

- Steady fall in gross and net emissions
- Budgets in target accounting basis reflect steady action

Domestic CCRA Budgets

- Steady fall in gross emissions; net emissions affected by BAU forestry cycles.
- Budgets following net emissions pathway appear to move slowly to 2035 (first 3 Budgets), then drop rapidly.

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Possible implementation & timing consequences

Accounting approach	Implementation consequences	Timing
<p>Status quo – continue with target accounting (current NDC approach)</p> <p><i>Option: expand coverage of NDC1 to additional pools (grasslands, wetlands)</i></p>	<p>Complete scheduled LUCAS/MPI implementation work.</p> <p><i>Additional resourcing for LUCAS</i></p>	<p>In time for reporting under the Paris Agreement (2023)</p>
<p>Inventory reporting as basis for NDC1 and domestic CCRA Budgets</p>	<p>s 9(2)(f)(iv), s 9(2)(g)(i)</p>	<ul style="list-style-type: none"> - New data would likely not be available by the time reporting begins under the Paris Agreement (2023) - Domestic Budgets would need to be set based on default emissions factors (& inventory methods/numbers could then shift later, affecting achievement) - Unclear how much could be implemented in time for setting NDC1 and Budgets

s 9(2)(f)(iv)



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