The True Story of New Zealand's Cheating Paris Target

Les Jones, July 2017

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Summary

Although New Zealand's Paris Agreement Climate change target of "30% below 2005 levels" sounds similar to those of Australia, Canada, USA and the EU, in fact it is far worse and weaker. This is because NZ uses a Gross-Net comparison between 2005 and 2030 rather than a Net-Net, like everyone else. Because our forest sink, the difference between our gross and net emissions, is so large, our target is hugely easier and shamefully unambitious. We used this method in the First Kyoto Assessment period and unnoticed by the world are continuing to use it for our Paris 2030 target. This essentially means that our target instead of being "30% below 2005 or 11% below 1990", is in fact "7.5% above 2005 or 67% above 1990". This disgraceful cheating needs to be revealed to the world. I suspect that many top climate scientists know this but are unwilling to reveal it because it would discredit the Paris agreement itself, and expose New Zealand to a much steeper reduction which would adversely affect New Zealand's economy. The conclusion must be that it is more important to be seen to do something about Climate Change than to actually do anything about it.

The story

To demonstrate the truth of the contention that NZ's target of "30% below 2005 levels or 11% below 1990 levels", is in fact "7.5% above 2005 levels or 67.9% above 1990 levels", requires careful consideration of two charts and one table.

Fig. 1.

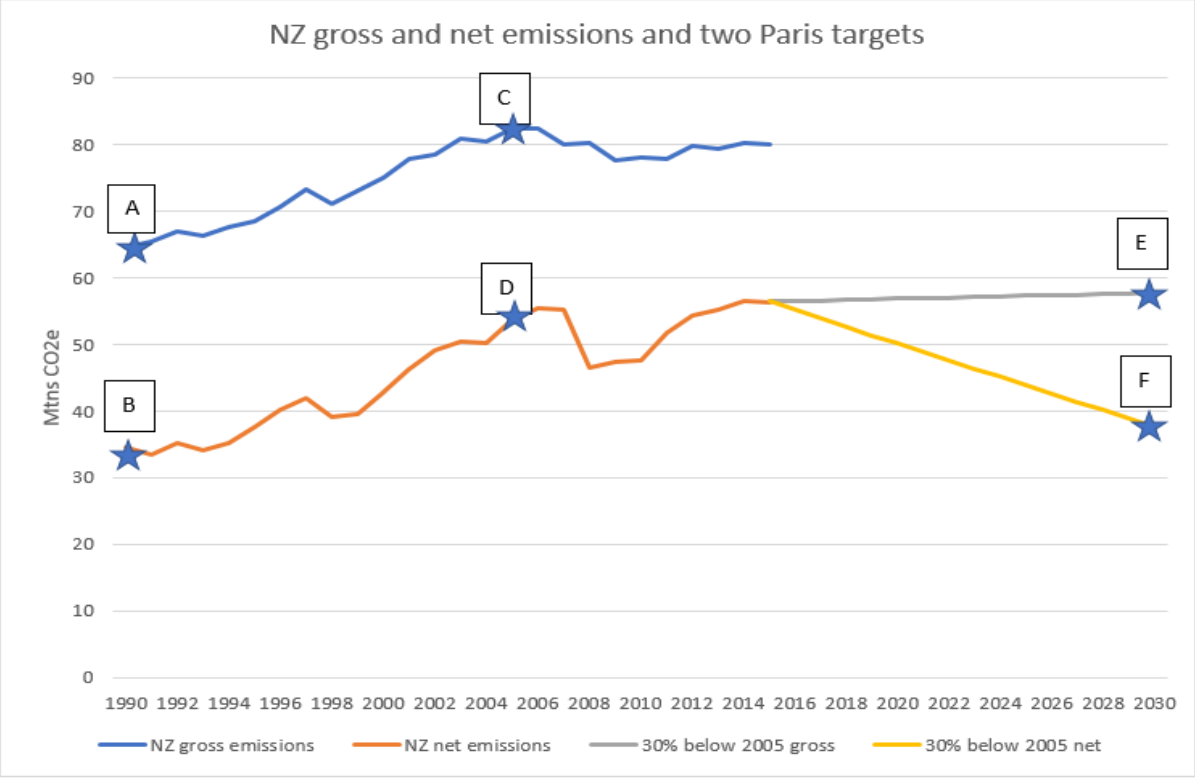


Fig 1. Shows NZ's gross and net ghg emissions from 1990 to 2015. This comes from the NZ GHG Inventory, published May 2017[1]. The chart also projects our emissions forward to 2030 on a straight line basis to reach our Paris commitment targets. There are two targets: Point E (57.7 Mtns) which represents our net emissions in 2030 being 30% below the 2005 gross level. Point E is what I believe is the Government's intended target. The second target, Point F, (37.6 Mtn), is what I believe should be NZ's target if we are to compare our target with those of Australia, Canada, USA and the EU.

Table 1. shows NZ emissions in the key years, 1990, 2005 (the base year for our Paris commitment}, 2015 (the latest official statistics) and 2030 (our Paris target year)

Table of key climate figures 1990-2030								
Year of	1990		2005		2015		2030	
Inventory	gross	net	gross	net	gross	net	net at 30%	net at 30% below
							below 2005 gross	2005 net
1990-2013	66.7	38	84.6	56	na	na	59.2	39.2
1990-2015	64.6	34.4	82.5	53.7	80.1	56.4	57.7	37.6
	Point A	Point B	Point C	Point D			Point E	Point F

There are four ways to prove that New Zealand's commitment to the Paris Climate Change treaty is point E, 2030 net being 30% below 2005 gross, which is not comparing like with like, and is a scam.

1. Firstly, by carefully reading the Intended Nationally Determined Contributions of the five countries in our comparison[2] (Appendix 2). We like to compare ourselves with Australia, Canada, The USA and the EU and our INDC sounds on the surface pretty similar to theirs. Australia's is "26-28% below 2005", Canada "30% below 2005", USA "26-28% below 2005 by 2025", and the EU "at least 40% domestic reduction below 1990 level". The EU commitment is by far the strongest. As well, we like to feel superior to Australia whose climate change-denying government encourages coal-fired power generation over renewables.

When we read Australia's INDC[2] it clearly states, "based on UNFCC inventory reporting categories using a net-net approach". Canada states, "account for the land sector using a net-net approach". The USA says, "to account for 100% of ghg emissions and removals on a net-net basis". The EU states, "…activity or land-based approach for emissions and removals from LULUCF". However, when we look at the NZ INDC we get "providing for Kyoto Protocol accounting approaches to be applied to the greenhouse gas inventory." Not a mention of net-net. If our government intended a net-net approach, why not say so like the other countries. The disturbing conclusion must be that it intends using the gross- net accounting method, and essentially cheating at the Paris Accord.

2. The issue could be easily settled by asking the Government one simple question: "Assuming that our emissions in 2005 (the base year) were 82.5 Mtn gross and 53.7 Mtns net (table 1), if NZ achieved its Paris target in 2030, what would its net emissions be in that year?" To my knowledge, no one has asked this

3. The third proof involves calculating how severe the reductions would have to be to reach a net-net reduction figure (point F) of 37.6 Mtns. The latest figure for net emissions is 56.4 Mtn from 2015 (table 1). However, it is now 2017 and there is no reason to believe that our current emissions are

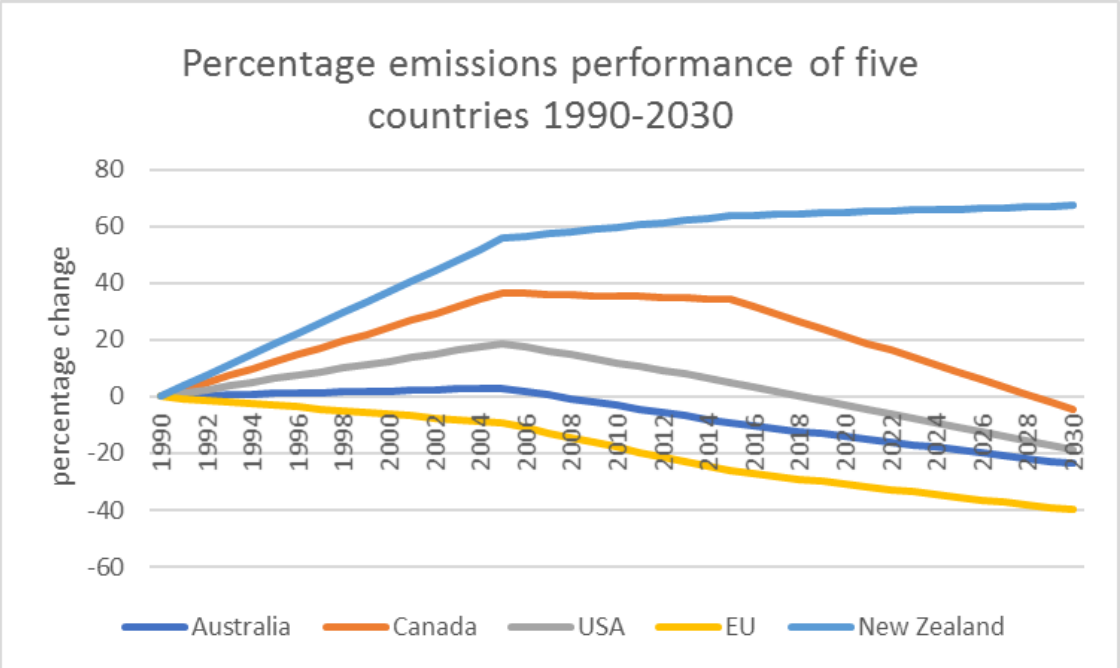
below 56.4 Mtn. This means that over 12 years the required drop would be 56.4-37.6 or 18.8 Mtns. On a straight-line basis, this means a reduction of 1.6 Mtn every year. Now, there is no government policy in place which could get anywhere near this amount of reduction, and in fact with their emphasis on road transport and irrigation, leading to dairy farming expansion, net emissions seem likely to continue rising. Even the Green Party is only proposing emission reductions of 1 Mtn per year. A reduction of 1.6 Mtns per year would require a reset of our economy, which leads to the conclusion that the government intends a gross-net target, not a net-net one.

4. The fourth proof means taking a close look at the statement "30% below 2005 levels which equates to 11 % below 1990 levels." This commitment was made in 2015 when the only figures available were from 2013. Now, from table 1, using the 2013 figures, 30% below 84.6 (2005 gross) is 59.2. 11% below 66.7 (1990 gross) is 59.4, near enough to the same number. Note these results are to be NZ's net emissions in 2030, which is fairly close to point E on chart 1.

In fact, it is exactly point E when you take into account the downward revision in the whole 1990-2015 emissions time series of approximately two Mtns. This recalculation is explained on page 5 of the 2017 ghg Inventory snapshot.

As well, it has been suggested that the Government could be talking about a gross-gross reduction or a net-net rather than a gross-net, as I believe they are. The numbers, however, contradict this. A)_A gross-gross reduction of 30% would be 30% below 2005 but 10% **ABOVE** 1990. B) A net-net reduction would be 30% below 2005, but 9.3% **above** 1990. Gross-net is the only one that fits, so by giving both the reduction below 2005 and its equivalent below 1990, the Government has given the only irrefutable evidence to support the near-proofs of 1 and 3 above, that NZ's Paris target is in fact a gross-net one.

Finally, Fig 2 illustrates how disgraceful is our contribution to stopping climate change.



Note: For simplicity, emissions are straight-line averaged between 1990 and 2005, between 2005 and 2015, and between 2015 and 2030. The pathways have actually shown considerable annual variation and will continue to do so.

Further explanation of Fig.2. We assume that all the five countries start in 1990, then we trace their net emissions growth, or fall, in percentage terms until 2015, according to their latest inventories[4]. The lines after 2015 show each country's progress towards their Paris goal assuming straight line progress. Because emissions between 2015 and 2020, the start of the Paris targets, are not known, we have assumed that net emissions in this period will be level and then the net- net line will fall steeply to reach the net -net target. Even if NZ pursues a net-net policy, which we believe it won't, its achievement will still be worse than any of the other countries!

Conclusion:

1. The outcome of all this subterfuge is that New Zealand, with such easy targets, has had no incentive to reduce emissions, with the result that our net emissions rise 1990 – 2015 (63%) is the second worst in the OECD, behind only Turkey.
2. Going forward to 2030 our emissions can rise rather than fall, and still meet the target, which is not doing our fair share to keep world temperature rise below 2 degrees.
3. We intend to use international carbon trading and cashing in our Kyoto credits, rather than domestic reductions, to meet our target
4. The world and almost all journalists, political parties (including the Green Party) and climate activists seem either convinced that New Zealand's Paris commitment is similar to other countries when it isn't, or if acknowledging its gross-net nature, do not see a problem with this.
5. The use of gross-net comparison under Kyoto has actually made our Paris target even weaker than shown above so far. This is because the weak Kyoto target pre 2012 allowed us to have a higher 2005 emission level, and the Paris reduction effort was calculated from this higher point, making it proportionally higher. This is the second reason why the blue NZ line is so far above the other four and the target for 2030 is 67% above 1990 levels, rather than 40% below 1990 like the EU is. This difference is astronomical! A look at the table (Reference 4), which supports Fig2. Makes it clear; Australia rose 3% from 1990 to 2005, Canada – 36.6%, USA 18.7% and EU fell 9.4%, whereas NZ rose 55.6% . This means that NZ, having to drop 30% from a much higher level, has an easier target.
6. If we had to bring our commitment into line with others' it would have a far more devastating effect on our economy than on any other country's.

Appendix 1

How I came to notice the gross-net deception.

Climate Action Tracker published a paper in 2015[3] entitled "New Zealand deploys creative accounting to allow emissions to rise." This outlines what happened under Kyoto. I contacted several people about this, who told me that all countries used gross-net for Kyoto. This is obviously not true. But the real enormity of the problem has now emerged with the use of the same accounting method for Paris 2030. I recently contacted more climate activists about this. One asked me what the difference between gross and net meant, and the other said that figures made their head spin. Now if activists who spend their waking hours battling climate change don't get it, what chance is there for the person in the street? If we are to reduce greenhouse gas emissions, we have to look carefully

at the figures and we need to ask persistent questions until we truly understand them and are able to expose corrupt practices with confidence. It is all too easy to just move onto the next issue or climate change scare story. What we really need is a deep understanding of the enormous reductions which will be needed to meet the 2 degree warming threshold and how these can be genuinely achieved.

Jan Wright, in her last report as Parliamentary commissioner for the Environment, "Stepping Stones to Paris and beyond," admits on page 19, "When expressed in net-net terms, and with1990 as a consistent base year, NZ's Paris target is 67% above 1990.."

Appendix 2

Climate action Tracker's Gross-net discussion

Net-Net, Gross-Net and Gross-gross accounting

To understand some of the elements of the LULUCF provisions of the Kyoto Protocol, and their problems, it is important to further distinguish three different accounting approaches.

Key issues arise in relation to two key questions involved in setting a reduction target relative to emissions in a base year or period: What are the set of emission sources and/or sinks used to define the base year, and what are the set of emissions sources and/or sinks used to define emissions in the commitment period, to compare with the target? Intuitively both of these sources and/or sinks should be the same so that one can compares apples with apples, and not different sets of emissions between the base year and target year.

The term "Gross emissions" refers to Kyoto Annex A emissions (without LULUCF emissions and removals). "Net emissions" are calculated as the sum of Kyoto Annex A emissions and the sum of LULUCF emissions and minus removals. Note that the LULUCF category is the sum of removals and emissions from the LULUCF activities. The LULUCF sector can be either positive (emission) or negative (sink): nearly all Annex I LULUCF sectors are net sinks.

Two broad approaches to accounting - "Gross-Gross" and "Net-Net" compare like with like, between the base year and commitment period, and if applied literally give a good

[21] QELRO = Quantitative emission limitation and reduction objective. The QELRO is expressed as a percentage in relation a base year, in the example here 1990, and denotes the annual, average level of allowed emissions during a given commitment period

indication of the real difference in emissions that the atmosphere sees between the base year and the commitment period.

"Gross-Gross" accounting is where "gross" emissions are used for both the base year to set the target and to count the emissions during the commitment period to compare to the target, and therefore check for compliance. Targets are set with respect to the base year emissions from sources as defined in Annex A to the Protocol. Intuitively Gross-Gross accounting presents no strange anomalies with respect to what the atmosphere sees from the accounted sources: like is compared with like in terms of target setting and compliance. In other words the accounting system is closed with respect to what the atmosphere sees. Of course, if some categories are not counted then anomalies arise e.g. in relation to international aviation and bunker fuels. If the Kyoto Protocol did not contain Article 3.3, 3.4 or 3.7, or if a country has no qualifying activities under these Articles, then its commitments would be based on Gross-Gross accounting.

"Net-net" accounting means that "net" emissions are used to define the emissions sources used in both the base year and the commitment period. Commitments would be defined relative to the "net" emissions in the base year and "net" emissions in the commitment period would be used for compliance purposes. As with gross-gross accounting like is compared with like, and there is no in principle asymmetry in what is used to set the target versus what is counted as emissions for compliance with an obligation.

The Kyoto Protocol, however, did not adopt the "net-net" approach due to a number of serious problems. Large data uncertainties in estimating sinks and high variability due to factors such as wildfires, droughts or other weather extremes meant that there could be many aspects of the LULUCF emissions that were outside the reasonable control of countries. A country with close to zero or small net emissions in its base year (because its LULUCF sink offsets its fossil fuel source) could find that a small change in either its LULUCF sink or Annex A emissions, would lead to a large difference between its commitment (allowed emissions) and its actual emissions during the commitment period. Where countries take on a legal binding obligation, every percentage point by which actual emissions exceed their target (allowed emissions) could be quite costly.

As a consequence of concerns over the environmental integrity of the gross-net approach and also of the effect this could have on the relative level of efforts between countries, the Kyoto Protocol adopted a limited "Gross-Net" approach, where the LUCF activities that could be counted were limited to direct human induced activities since 1990, or capped. Using agreed LULUCF accounting rules, Parties with a commitment under the Kyoto Protocol may add or subtract emissions and removals from LULUCF to their allowed Annex A emissions over the course of a given commitment period. A LULUCF credit adds to a Party's allowed Annex A emissions and a LULUCF debit reduces a Party's allowed Annex A emissions.

Credits and debits for different LULUCF activities[23] are accounted for in different ways for different types of land use and in different commitment periods. One example of an accounting rule is the gross-net approach applied to ARD (afforestation/reforestation and deforestation), which applies to all Kyoto Parties for both the first and second commitment periods.

This rule says that Parties are allowed to account for all emissions and removals from these activities over the commitment period and add them to their allowed Annex A emissions. If a Party has removals from Afforestation/Reforestation activities during a commitment period, instead of implementing climate policies to decarbonise their transport or energy sectors, Parties can rely on removals from those activities to meet their target. In the case of forest management activities, or where in the case of cropland and grazing land management a net-net approach is taken.

Forest Management was capped to reflect the desire to limit the accounting of activities that had already occurred or that would have happened anyway. In limiting the "net" LUCF activities that can be counted, the Protocol attempted to reduce the problems that would have arisen from a full "Gross-Net" approach. The success of this is however open to question.

The limited "Gross-Net", through the ways in which LULUCF activities have been defined and are accounted, has opened up a situation where for some countries there is a very large discrepancy between what the atmosphere "sees" and what the target looks like. At the broadest level, in the case of New Zealand, the target set of 100% of 1990 gross emissions has effectively resulted in an increase of approximately 23% above 1990 gross emissions for the first commitment period. A further indication of this serious anomaly is that net emissions were about 130% above 1990 levels during the first period, indicating that not only did gross emissions increase significantly since 1990, but the sink actually decreased.

For this reason many countries judged a net-net approach to be too risky. However, this is the approach proposed by some countries, including the USA, Canada and Norway, for the post 2020 period. In the case of Norway, however it should be noted that an explicit commitment is made in their INDC to ensure that changes in the LULUCF source/sink magnitudes do not affect the reductions in GHG emissions excluding LULUCF.

In addition to these approaches, there was a third approach put forward principally by New Zealand called the "gross-net" approach[22]. Gross emissions are used to calculate the base year emissions and targets are set with respect to these emissions. Compliance however is based on net emissions during the commitment period. In this case the atmosphere "sees" something completely different than the accounting system, as gross emissions are almost always much higher than the net emissions (gross emissions minus the sink) used for compliance with the target. For most cases, if a country met a

[22] http://unfccc.int/resource/docs/tp/tp0200.pdf

reduction target set using gross-net accounting, rather than a reduction the atmosphere would have seen a real increase in emissions.

Appendix 3

INDC exerpts for Australia, USA, Canada and New Zealand.

Accounting approach for land sector:

The United States intends to include all categories of emissions by sources and removals by sinks, and all pools and gases, as reported in the Inventory of United States Greenhouse Gas Emissions and Sinks; to account for the land sector using a net-net approach; and to use a "production approach" to account for harvested wood products consistent with IPCC guidance. The United States may also exclude emissions from natural disturbances, consistent with available IPCC guidance.

There are material data collection and methodological challenges to estimating emissions and removals in the land sector. Consistent with IPCC Good Practice, the United States has continued to improve its land sector greenhouse gas reporting, which involves updating its methodologies. The base year and target for the U.S. INDC were established on the basis of the methodologies used for the land sector in the 2014 Inventory of United States Greenhouse Gas Emissions and Sinks and the United States 2014 Biennial Report.

Canada INDC

	cooperative action with its continental trading partners, particularly the United States, and will work towards further action in integrated sectors of the economy, including energy and transportation. Canadian provinces and territories have significant authorities over the fields of natural resources, energy, and the environment. Each has its own legal framework and each has its own policies and measures that will reduce greenhouse gas emissions. Mechanisms exist for the federal government to engage with Canadian provinces and territories, as well as other key partners and stakeholders, on climate change. In particular, the Canadian Council of Ministers of the Environment, a minister-led intergovernmental forum, will be addressing climate change on an ongoing basis.
Metric applied	100-year Global Warming Potential values from the IPCC Fourth Assessment Report
Methodologies for estimating emissions	IPCC Guidelines 2006
Approach to accounting for agriculture, forestry, and other land uses	Canada intends to account for the land sector using a net-net approach, and to use a "production approach" to account for harvested wood products. Canada will exclude emissions from natural disturbances. fires
Contribution of international mechanisms	Canada may use international mechanisms to achieve its 2030 target, subject to robust systems that deliver real and verified emissions reductions.

Attachment: Australia's intended nationally determined contribution

Target: 26 to 28 per cent below 2005 levels by 2030

Reference point	
Base year	2005
Time frames	
Period covered	2021 – 2030
Scope and Coverage	
Target type	Absolute economy-wide emissions reduction by 2030, to be developed into an emissions budget covering the period 2021-2030
Gases covered	Carbon dioxide (CO_2); Methane (CH_4); Nitrous oxide (N_2O); Hydrofluorocarbons (HFCs); Perfluorocarbons (PFCs); Sulphur hexafluoride (SF_6); Nitrogen trifluoride (NF_3)
Sectors covered	Energy; Industrial processes and product use; Agriculture; Land-use, land-use change and forestry; Waste
% of base year emissions covered	100 per cent of greenhouse gas emissions and removals in Australia's national greenhouse gas inventory
Assumptions and methodological approaches for emissions estimates and accounting	
Metrics	Australia intends to apply 100 year Global Warming Potentials (GWPs) as contained in inventory reporting guidelines, currently IPCC Fourth Assessment Report 100 year GWPs, or as otherwise agreed.
Emissions estimation methodology	Australia intends to apply the IPCC 2006 Guidelines and IPCC 2013 Revised Supplementary Methods, or as otherwise agreed.
Accounting approach	Australia intends to account based on UNFCCC inventory reporting categories using a net-net approach. Australia will apply IPCC guidance for treatment of natural disturbance and variation. Australia's INDC assumes that accounting provisions under the Paris agreement will: - Preserve the integrity of the agreement by ensuring claimed emissions reductions are genuine and are not double counted; and - Recognise emissions reductions from all sectors.
Australia reserves the right to adjust our target and its parameters before it is finalised under a new global agreement should the rules and other underpinning arrangements of the agreement differ in a way that materially impacts the definition of our target.	

NZ INDC

Information to facilitate clarity, transparency and understanding

Time period	2021 to 2030
Type of commitment	Absolute reduction from base year emissions managed using a carbon budget.
Base year	1990
Reduction level	Emissions will be reduced to 30% below 2005 levels by 2030. The 2005 reference has been chosen for ease of comparability with other countries. This responsibility target corresponds to a reduction of 11% from 1990 levels.
Scope and coverage	The target is economy-wide covering all sectors: • Energy • Industrial processes and product use • Agriculture • Forestry and other land use • Waste and all greenhouse gases: • CO_2 • HFCs • N_2O • CH_4 • PFCs • NF_3 • SF_6
Methodological approaches for estimating anthropogenic greenhouse gas emissions and removals	This INDC was prepared using 100 year Global Warming Potentials (GWPs) from the IPCC 4th assessment report, the IPCC 2006 greenhouse gas inventory methodologies, and the 2013 IPCC KP Supplement.

New Zealand's INDC assumes that any rules agreed between Parties will allow for the following:

Approach to accounting for the land sector (agriculture, forestry and other land uses)	Application of accounting methodologies that build on existing IPCC guidance where available (including the 2006 IPCC Guidelines and the 2013 IPCC Kyoto Protocol supplement), recognising the specific biophysical characteristics of the land sector and the need to manage multiple objectives, including global food security. Accounting will be land or activity-based, recognise permanent and additional carbon stock changes, and include provisions to address natural disturbance, permanence, land-use flexibility, legacy and non-anthropogenic effects. Harvested wood products accounting will be on the basis of a production approach.
Use of international market mechanisms:	Unrestricted access to global carbon markets that enable trading and use of a wide variety of units that meet reasonable standards and guidelines to: • ensure the environmental integrity of units/credits generated or purchased • guard against double-claiming/double-counting, and • ensure transparency in accounting.

New Zealand will finalise this INDC following full and final agreement on the accounting rules/guidelines to apply in the above areas, or confirmation in Paris that accounting rules agreed post-Paris will not be applied retroactively.

NEW ZEALAND

References

1. New Zealand greenhouse Gas Inventory, 1990-2015, May 2017, page 37 of the full report. This chart, the one used in my paper, is based on the source table for the latter chart, here.
2. Intended Nationally Determined Contributions from Australia, Canada, USA and EU.
3. "New Zealand deploys creative accounting to allow emissions to rise" Climate Action Tracker Policy brief, June 2015. http://climateactiontracker.org/assets/publications/briefing_papers/NZ_INDC_Assessment_July_2015.pdf
4. Table of values for chart 2

Table for Fig 2												
country	1990		2005		% rise 1990-2005		2015		2030	%(rise)	% (rise)	% (rise)
	gross	net	gross	net	gross	net	gross	net	target	2005-15	1990-2015	1990-2030
									net	net	net	
Australia	419	579	521	597		3%	539	525	441.78	-12.06	-9.33	-23.70
NZ Equiv		34.5				35.54			26% below	31.25		26.32
									2005 net			
Canada	611	513	738	701		36.60%	722	688	490.7	-1.85	34.11	-4.35
NZEquiv		34.5				47.13			30% below	46.26		33.00
									2005 net			
USA	6363	5543	7313	6582		18.70%	6587	5828	4870.68	-11.46	5.14	-12.13
NZ Equiv		34.5				40.95			26% below	36.26		30.32
									2005 net			
EU	5672	5429	5223	4916		-9.40%	4200	3999	3257.4	-18.65	-26.34	-40.00
NZ equiv.		34.5				31.26			40% below	25.43		20.70
									1990 net			
NZ	64.6	34.5	82.5	53.7		55.60%	80.2	56.4	57.75	5.03	63.48	67.39
NZ		34.5				51.99			30% below	56.39		57.40
									2005 gross			
Figures for each country come from the greenhouse gas inventories 1990-2015, published 2017.												