



CLIMATE CHANGE IN 2017

***The Paris Agreement, GLOBE-NZ & the Vivid Report
Background to a Cross-Party Dialogue***

Kennedy Graham, Director, NZ Centre for Global Studies
former Chair, GLOBE-NZ (2015-17)

Paris Agreement, 12 Dec. 2015

(FCCC/CP/2015/L.9)

Art. 1

(a) “Holding the increase in global average temperature to ‘well below 2°C above pre-industrial levels, and to pursue efforts to limit the temperature increase to 1.5°C....’

Art. 4.

1. “Reach global peaking of GHG emissions as soon as possible (recognising that peaking will take longer for developing country Parties); and to undertake rapid reductions thereafter in accordance with best available science, so as to achieve a balance between anthropogenic emissions by sources and removals by sinks of GHGs in the second half of this century, and in the context of SD and efforts to eradicate poverty.”

4. “Developed country Parties should continue taking the lead by undertaking economy-wide absolute emission reduction targets.”

Global Emissions

		Emissions (Annual)	Temperature (Long-term)	
1990	IPCC-AR1	34 Gt		
1992	Framework Convention			
2010	Cancun		Goal	2.0°C
2015	Paris Agreement	49 Gt		
2030	BAU projected	65 Gt	Projected	3.8°C
	NDC projected	55 Gt	Projected	2.6 – 3.1°C
	Cancun/Paris goal	44 Gt		2.0°C
	Paris goal	37 Gt		1.5°C
2050-2100	[Paris]	0 Gt	Goal	2.0°C

Global Emissions

1992-2015	'Top-down' approach: - binding legal obligations	Kyoto 1	2008-12
		Kyoto 2	2013-20
2015	'Bottom-up' approach - voluntary targets	Paris	2030 NDCs
		Paris	2050-2100
2016		Marrakech	2050 Pathways

National Emissions

What is the appropriate future emissions level for New Zealand, in light of Paris?
= “global emissions peak asap & achieve net zero in the 2nd half of 21st c.”

		Gross	Net	Targets
	Actual:			
1990		66.7 Mt	32 Mt	
2012		82.0	67.3	66 = equal to 1990 level
	Projected:			
2020			77.8	63 net = 5% off 1990 gross
2030			94.6	59 net = 11% off 1990 gross
2050				33 net = 50% off 1990

GLOBE

Global Legislators for a Balanced Environment

GLOBE-International

1990

US senators (Gore, Kerry); Japan, Russia, EU)



GLOBE-NZ (national chapter) 2015

35 MPs from all 7 parties in Parliament

2015-16 Briefings from foreign/ local experts

2016-17 Commissioned Vivid Economics Ltd (London)
'transformational pathways to emissions neutrality'

Vivid Report

‘Net Zero in New Zealand:

Scenarios to achieve net domestic emissions neutrality in the 2nd half of the century’

Team: John Ward; Alex Kazaglis; Paul Sammon (Stuart Evans)

Three visits to NZ from London	Sept.	‘16
	Nov.	‘16
	March	‘17

Launched	Wellington Beehive Theatrette	21 March ‘17
	Christchurch City Council	22 March ‘17
	Auckland Council	23 March ‘17

Vivid Report:

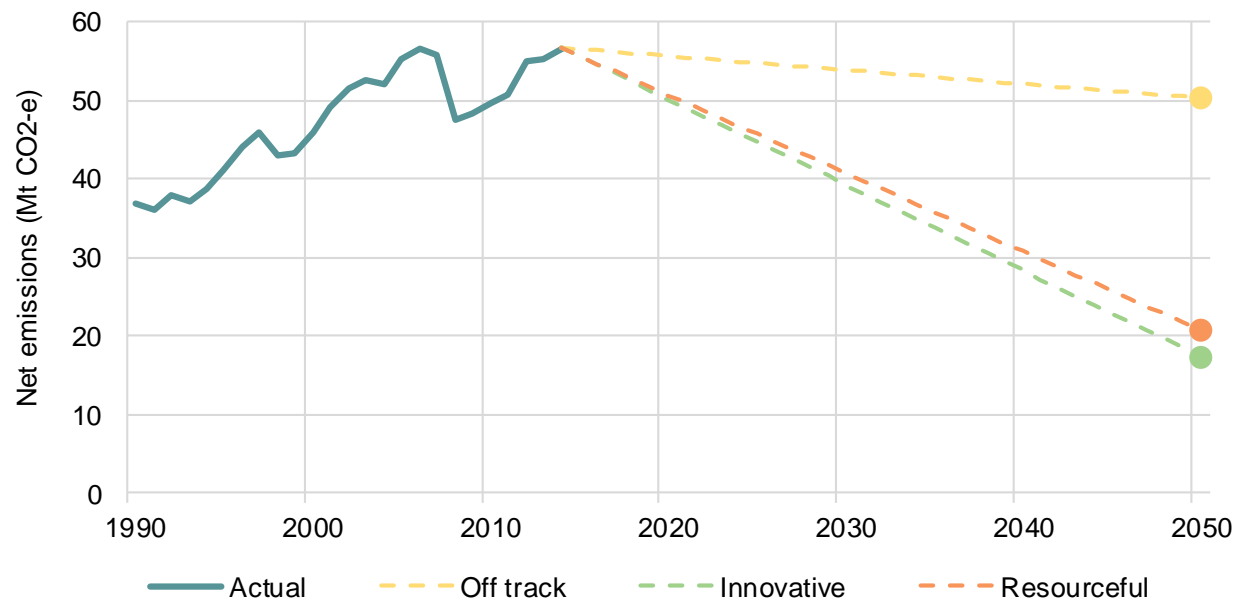


Vivid's Four Scenarios

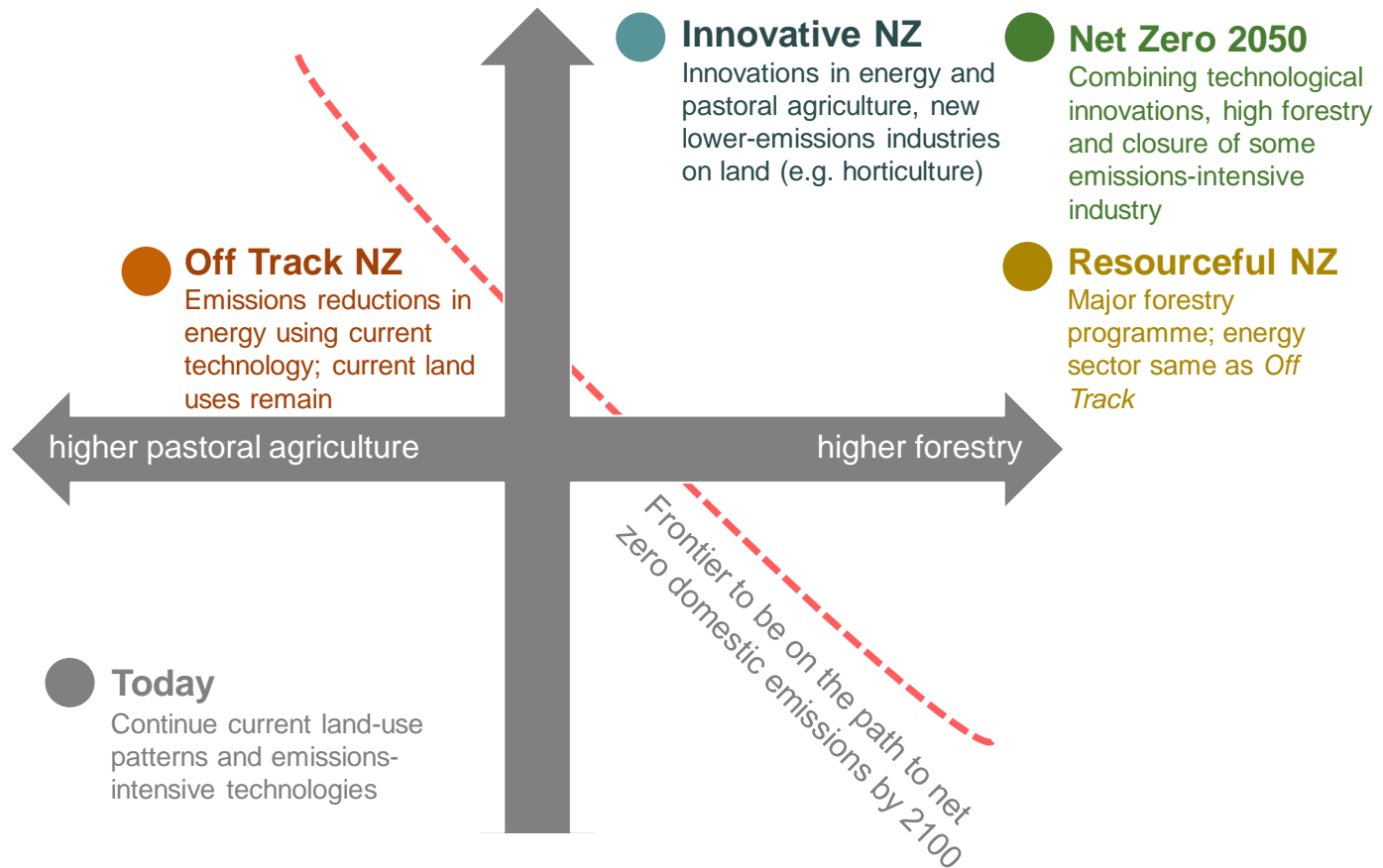
(net emissions in 2050)

	High	Low	Broad Description
1. Off-track	50.3	43.4	Exploits low-cost reductions; same land use
2. Resourceful	20.2	13.8	Exploits low-cost reductions; land use changes
3. Innovative	16.9	12.0	Further technol. advances; land-use changes
4. Net-Zero 2050*		1.8	Ambition of 2 & 3; + closure of alum, oil, iron, steel <i>* Not explored analytically but 'is possible'</i>

Three Scenarios on Graph



Four scenarios: dynamic pathways



Vivid Report: Five Conclusions

1. Any pathway to NZ domestic emissions reduction = substantial change to patterns of energy supply and use (moving towards 100% renewables-grid and substantial EV/low-grade heat).
2. Possible NZ = pathway to domestic net-zero emissions 2nd ½ of 21st c., but only if alters land-use patterns.
3. Choice: new technologies / substantial afforestation.
4. If substantially afforests / extensive new technologies, possible = domestic net zero emissions by 2050.
5. Afforestation important in 2050 trajectory, 2nd ½ 21st c. = strategies needed.

Vivid Report: Nine Recommendations

1. NZG develop a trajectory for emissions **price policy values that are factored into all government assessment** and analyses.
2. Encouraging the private sector to make investments consistent with a low-emissions future requires a **robust and predictable emissions price**. Extension of the emissions price to **biological emissions from agricultural production** would encourage land-use decisions to take account of the emissions intensity of different activities that use the land.
3. **Needs changed market & regulatory arrangements**, infrastructure deployment mechanisms, and specific support for additional barriers and market failures.
4. Globally, case for **R&D in low-emission technology**; economic advantage for NZ expertise;
5. **Political parties** should actively seek to identify and articulate areas of common agreement on climate policy in order to enhance policy coherence and predictability, while allowing room for an informed debate and party difference over policy design.
6. **Independent institutions, by statute**, can help assist both the Parliament and government in developing coherent national climate policy, and enhance informed citizen engagement.
7. Policy-making adopt a **holistic approach**, including stakeholder groups in policy-design & consultation with iwi & hāpu, as per the Treaty of Waitangi's principle of partnership.
8. Important need to **upgrade the evidence base** in NZ for low-emission pathway-planning (energy/land-use tool).
9. Understanding and addressing the **distributional implications** of differing low-emissions scenarios, and the policy responses that might help alleviate any concerns.

Report Launch: 21 March '17



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Parliamentary Debate: 13 April '17



Parliamentary Debate

13 April 2017



Dr KENNEDY GRAHAM (Green): The debate this afternoon marks the end of the Vivid Economics project and the beginning of something new in New Zealand climate policy. The ... report reflects unprecedented cross-party collaboration. It provides an opportunity for developing an ambitious pathway to domestic emissions neutrality... Nothing is more critical to the fate of New Zealand and the well-being of future generations.



SCOTT SIMPSON (National—Coromandel): This report—this very fine Vivid report—is an example of our Parliament working, I think, at its very best. That 35 members of this Parliament—representative of every party in this House—could come together to embark upon a project of common interest, of shared interest in climate change and climate change issues, is, I think, a historic and momentous event.



TRACEY MARTIN (NZ First): What we have produced, what we now claim successful, what we have produced as a Parliament with 35 members, ultimately, across the Parliament, is a document that starts us on a pathway. ... We need to have a wider conversation—and this will inform it. All these conversations are now possible because of this report, and they are all possible amongst us all because of GLOBE.

Parliamentary Debate

13 April 2017



Hon TE URUROYA FLAVELL (Maori Party; Minister for Māori Development): The Vivid Economics report identified that for New Zealand the transition to emission neutrality will require.... changes in land use, pathways relying less on breakthrough technologies, and agriculture will require more extensive forestation by 2050. It could be possible for NZ to reach net zero emissions by 2050 and the Māori Party wants to be a part of this.



Hon PETER DUNNE (United Future; Minister of Internal Affairs): We should not underestimate the significance of the fact that we are having this debate in Parliament today. It has been many years since Parliament has set aside its time for a debate of this nature on a special topic of interest, and it is appropriate that this should be the occasion.

I say 'we' because this is a parliamentary responsibility. This is not, in my view, a responsibility limited to the particular Government of the day. It is a parliamentary responsibility, and we as parliamentarians have to take control of it and drive it forward. The goals that New Zealand sets for the next 50 years, the next 100 years, and beyond, will go long beyond all of our time in this place. It is not just the responsibility of this particular Government or those that will follow. ... One important step that has already taken place has been that the Globe group has recognised that the achievement of this report is, if you like, the end of the beginning, but the next phase is now upon us. This is a momentous event. We should not let it pass unremarked. We should commit ourselves as a Parliament to work now together, collaboratively, to give effect to the best possible climate policy for New Zealand in the years ahead.



Dr MEGAN WOODS (Labour—Wigram): ... this report has done ... something very important in the climate debate in New Zealand, in that it has allowed political consensus around the problem. We have, in one place, a document that states very clearly what the challenge is and what we need to address. It has been a pleasure to work with colleagues from across the House in bringing this report. It is now the basis for us to pick up the pace



STUART SMITH (National—Kaikōura): I have to say, and I am sure all the GLOBE-NZ members will agree, that it has been a great collegial exercise. It has been a fantastic opportunity to get to know other people from across the House at a different level, and to discuss things of a common interest. ... The report itself, I think, is a great report. .. we have got a long way to go, but we just have to continue to keep working in the way that we are, and we will get the result that will be in the interest of everyone in New Zealand.



Hon DAVID PARKER (Labour): ... I know of no environmental problem to which there is not a solution. There is none. The solution may involve substituting a product and it might cost a little bit more, but the new practice costs more only if you are not properly calculating or valuing the environmental cost that you are avoiding. ... my thanks to all members from various parties who have supported us getting this far through the Vivid Economics report.



JAMES SHAW (Co-Leader—Green): ...It is remarkable that MPs from all parties are here today to find a common pathway to tackle this crisis. ... It may well be lost on people outside of this chamber actually how big a deal it is to have MPs from every single party in Parliament working together on anything, let alone climate change.



DENIS O'ROURKE (NZ First): The most important thing I can, and will, say is this: New Zealand First is completely committed to taking a cross-party approach to identifying the best pathways for New Zealand to follow to reach our Paris Agreement commitments. ... If we believe in that and strive to achieve the targets that we are to set as from today—or as soon as we can—by working together, then we could not leave a greater legacy to our children and our grandchildren and future generations. ...



DAVID SEYMOUR (Leader—ACT): It is a pleasure to participate in this special debate on an issue that concerns so many people so deeply. ... The report that we are asked to debate and comment on, effectively, gives us a series of choices as a country. Thank you, and thank you for this wonderful debate.



Hon PAULA BENNETT (National; Deputy Prime Minister and Minister for Climate Change Issues): Here on a Thursday afternoon in Parliament, we are having a debate where we all kind of agree with each other on a cross-party piece of work. I just want to say that I fully endorse and support the cross-party nature of GLOBE-NZ and, certainly, the introduction of this Vivid Economics report on climate change.

I like that we have got a cross-party piece of work. I admire and respect the work that Vivid has done. As a consequence of that, I think that even the Minister in the Government can help feed into the work that we are doing. I certainly acknowledge it as a piece of work that is owned by Parliament and is theirs, and is owned by Vivid. But you cannot blame me for wanting to read it and take some bits out of it and think about how that kind of shapes the work that I am doing as a Minister.

GLOBE-NZ – Cross-Party Debates on the Vivid Report



GLOBE-NZ
Cross-Party Debate on the Vivid Report
Christchurch, 27 April

Denis O'Rourke, NZ First
Dr Megan Woods, Labour
Stuart Smith, National
Dr Kennedy Graham, Green

**GLOBE-NZ –
Cross-Party Debates on the Vivid Report
Hamilton, 16 June**



GLOBE-NZ Briefing by NZ IPCC Scientists

Parliament, 31 May

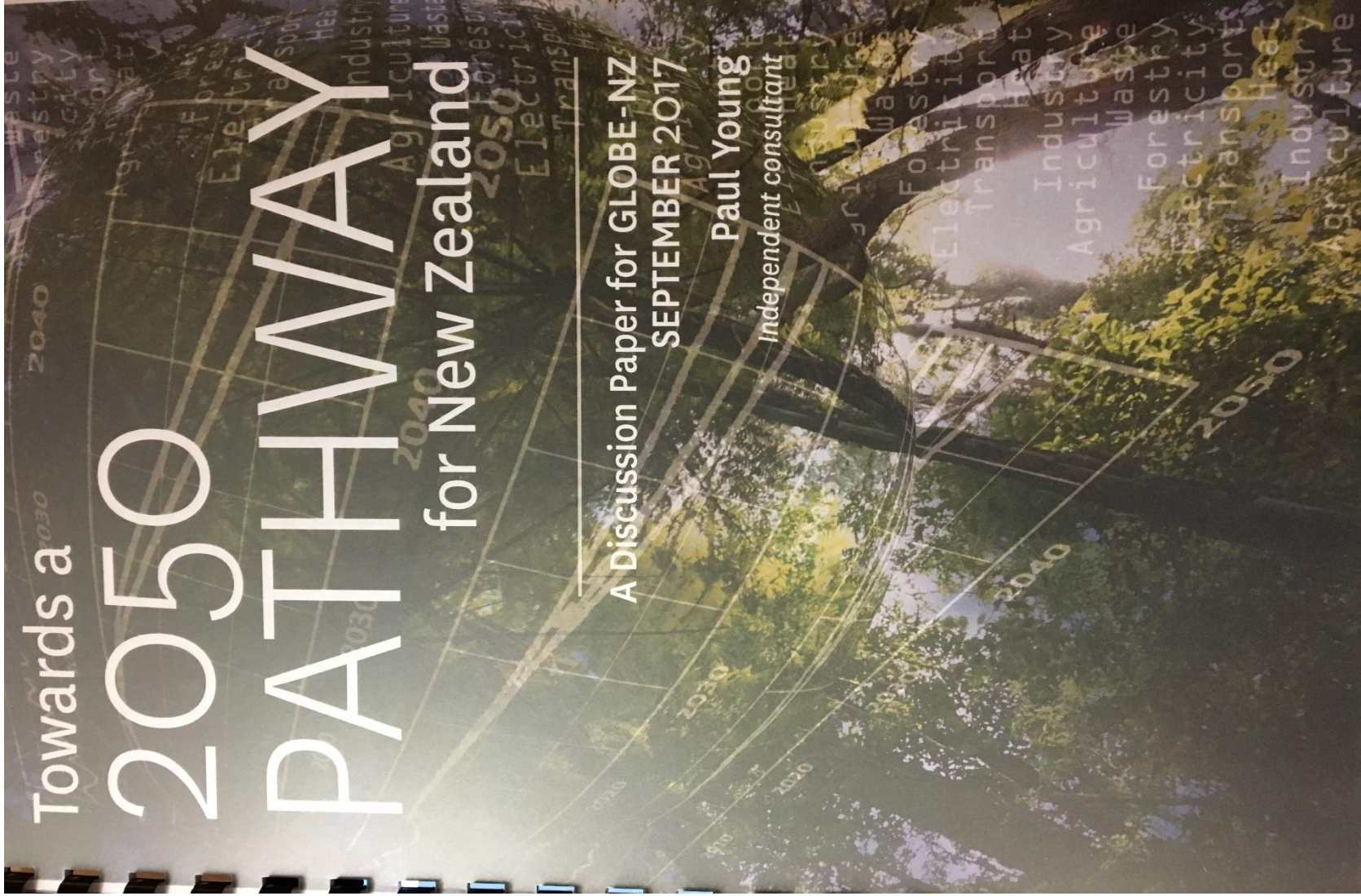


Statement of Collaborative Purpose

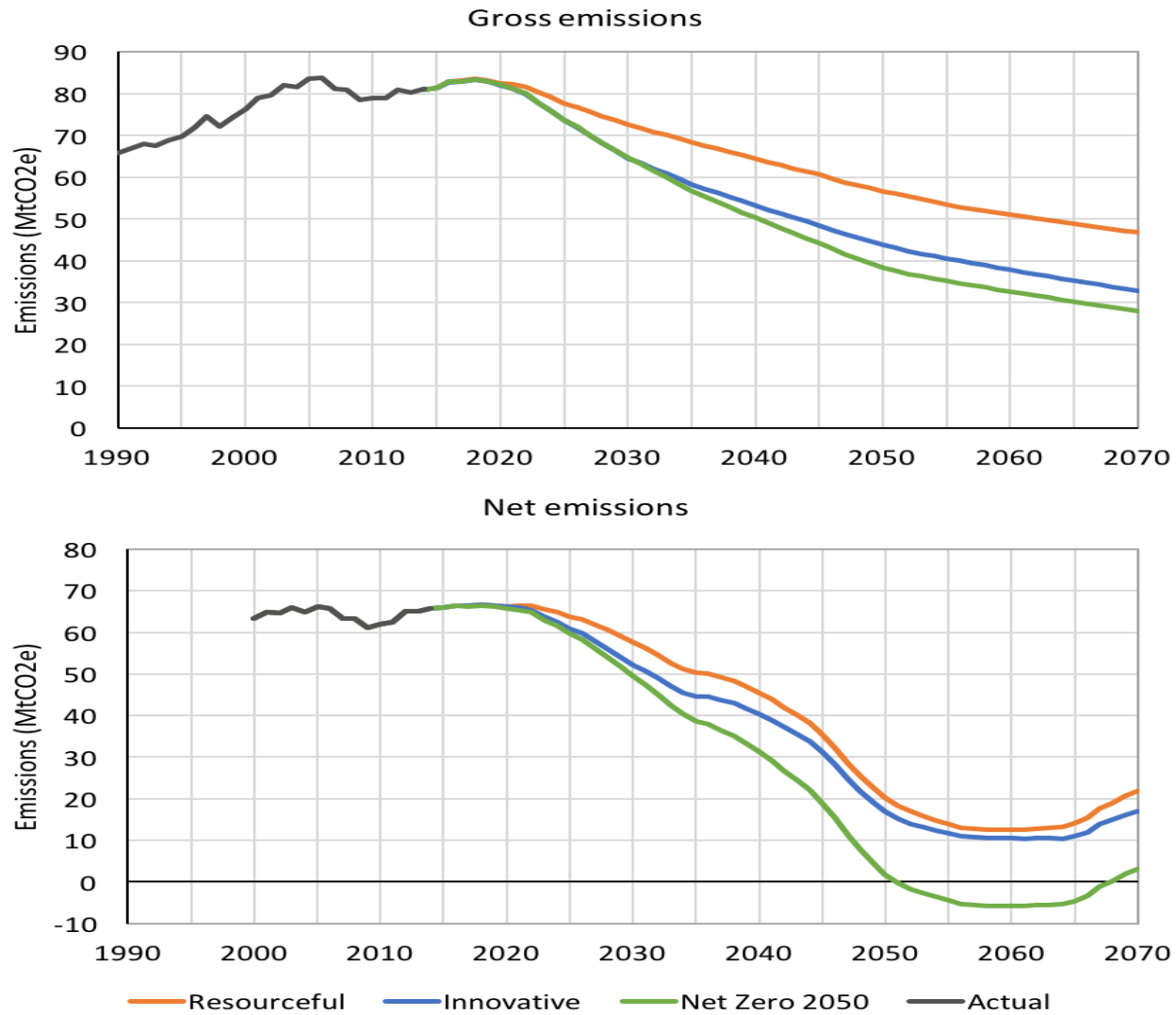
(5 July 2017)

1. Accept the formal commitment in the **Paris Agreement** (Dec. 2015) to holding the increase in global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit it to 1.5°C, and the associated global goal of zero net emissions in the second half of the 21st century with developed countries continuing to take the lead with economy-wide reduction targets,² recognising that this means New Zealand reaching 'net-zero' domestic emissions as early in that period as possible;
2. Note the invitation to communicate to the UNFCCC, by 2020, **a mid-century, long-term GHG emission strategy** in accordance with the decision adopting the Paris Agreement (Paris, Dec. 2015);³
3. Note, further to the call for long-term strategies, **the 2050 Pathways Platform** launched at COP-22 (Marrakesh, Nov. 2016) in which New Zealand is one of the 22 countries that "have started or are about to start a process of preparing a 2050 pathway"⁴ recognising that six Parties have already communicated their national strategies;⁵
4. Welcome the **report by Vivid Economics**, commissioned by our group, entitled Net zero in New Zealand; Scenarios to achieve domestic emission neutrality in the second half of the century, (March, 2017) which identifies four scenarios for emission reductions, two of which are consistent with the goal of 2°C and one of which may be consistent with the goal of 1.5°C; and also the study underway by the Productivity Commission which will complement the work of the Vivid Report.
5. **Accept, as the basis for discussion as to their respective merits, the Innovative and Resourceful scenarios identified for New Zealand; and the Net-Zero 2050 scenario as a serious aspirational goal;**
6. **Plan to develop, through further expert advice, an indicative pathway (bounded by quantitative ranges) towards domestic emissions neutrality, having regard to the Report's conclusions and recommendations, noting that the Report applies "scenario analysis across the NZ economy to help illuminate long-term low-emission pathways" (Vivid: Executive Summary);**
7. **On the basis of such an indicative pathway and at an appropriate time, commence a dialogue within our group on policy measures, with an appropriate combination of market, regulatory and educational measures, to ensure a timely and just transition to a net-zero or a low-carbon economy by 2050.**

Step 6. 2050 Pathway – Young paper



Young: Gross & Net Emissions Pathway



Towards a 2050 Pathway for NZ (Paul Young, Sept. '17)

		2014	2050	
			Resourcef.	Net-Zero
Energy	Electricity	4.2	3.3	0.7
	Transport	14.1	5.8	3.9
	Other fossil	11.9	8.3	3.0
	Fugitives	2.0	2.8	1.8
	Sub-total	32.1	20.2	9.4
Industry		5.2	4.2	1.4
Agriculture		39.6	28.5	24.7
Waste		4.1	3.8	2.7
Gross		81.1	56.6	38.3
LULUCF		-24.4	-36.4	-36.5
Net		56.7	20.2	1.8

Vivid Economics – ‘Net zero in NZ’)March 2017)

	2014	2050 (Inn.)
GDP (NZ\$ b)	211	422
Popul. (m.)	4.5	6.1
Energy intensity (MJ/\$GDP)	2.86	1.25
Energy delivered (GWh)	164,892	140,288
Electricity (GWh)	42,193	89,769
Coal	1,831	0
Gas	6,567	1,795
Hydro	24,076	29,076
Geothermal	6,871	17,954
Solar	17	3,591
Wind	2,192	36,456
Biofuels	585	898

From 11.9 to 3.0 Mt (2014-50)

Vivid/Young

“Emissions from heat & OFF combustion plateau around 2020, before starting to fall.

Reductions:

Resourceful:	Agricultural processing, esp. dairy; almost decarbonised by 2050 Petroleum & chemicals (still largest emitter in 2050)
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Net-zero:	2030-50: decarbonised or closure of petroleum, chemicals, primary metal
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Parliamentary website

<https://www.parliament.nz/en/get-involved/features/mps-collaborate-across-party-lines-in-response-to-climate-change/>