Accelerating renewable energy and energy efficiency

Response to the MBIE discussion document

Clint Betteridge

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Submission prepared by: Clint Betteridge
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Introduction

1. I have eleven years of planning and project management experience, five years of those within New Zealand. My experience is within local government and the private sector. I am an associate member of the New Zealand Planning Institute.

2. For nearly the past three years, I have worked as a Consent Planner in the Wellington City Council Resource Consent team. I am currently employed as a Senior Consent Planner and my role has primarily included the processing and assessing of resource consent applications for a wide variety of land uses and subdivisions within Wellington, as well as providing technical and pre-application advice for resource consents and other related applications.

3. I started working for the Council after returning to New Zealand from the United Kingdom where I was in involved in the planning and project management aspects of wind energy development for nearly six years, all of which was developed to take advantage of the UK Feed in Tariff. I was involved from concept to completion and oversaw all parts of the development of a wind turbine site, which was hugely beneficial experience to help plan and deliver future projects smoothly.

4. Most of the UK projects I was involved in were based in Scotland and included various scales from 1 to 2 wind turbines, from a maximum height of 34m to 67m and ranging from 50kW to 500kW.

5. My observations of the New Zealand renewable energy industry and future development opportunities are mainly compared to this working experience in the UK, but also based on further reading of wind energy development constraints in New Zealand as well as discussions with former industry colleagues.

6. I have provided responses below to a number of questions raised in the discussion document. My responses are primarily in relation to wind energy and associated spatial/landscape constraints. This response is a personal response and all views expressed are my own, unless otherwise noted.

Questions responded to

7. *Q5.4: If you favour financial support, what sort of incentives could be considered? What are the benefits, costs and the risks of these incentives?*

   Refer to financial incentives section below.

8. *Q7.22: Can you suggest any other options (statutory or non-statutory) that would help accelerate the future development of renewable energy?*

   Refer to first things first, spatial planning, and DOC should designate sections below.

Financial incentives

9. There are a number of financial incentives that could be investigated to help accelerate increased renewable energy generation in NZ, this is particularly so with a Feed in-Tariff (FIT) –

especially for smaller scale projects i.e. less than 5MW total installed capacity. As NZ does not have a FIT, I have discussed some learnings of overseas approaches to a FIT below.

Queensland, Australia

10. In July 2008, the Queensland Government introduced the Solar Bonus Scheme (SBS) as part of the Clean Energy Act 2008. The scheme[1] was established with the aim to:

    - make solar power more affordable for Queenslanders;
    - stimulate the solar power industry; and
    - encourage energy efficiency.

11. The results to date have certainly been noticeable – by mid 2009 only 3.9% of Queensland's electricity was generated from renewable sources, primarily from biomass[2]. At this time small scale solar PV generated only 51GWh. As of mid 2018, this was estimated to be 7.1%, representing almost a **3.2%** increase in renewable energy generation in the space of 9 years, almost doubling it. Interestingly, this increase is almost all attributable to small scale solar PV, which had increased from 51GWh to 2,761GWh - which goes to show the success of the FIT. Today, that small scale solar PV figure is even higher (updated Australian energy statistics not yet released) and over 560,000 households in Queensland have solar PV installed on their rooftops.

12. As can be seen, small scale solar PV has proved successful in Queensland and now plays a large part in their renewables mix – with progress primarily all in the last 10 years. With the increase, there has been an increase in consumers power bills, which is generally to be expected when a FIT is established to boost renewables. Due to the success of the FIT, the original 44c/kWh rate people got paid to export their solar power back to the grid was reduced to 8c/kWH after only 4 years of the FIT being in place – and earlier than what the industry had anticipated which was claimed to cause uncertainty in this market[3].

United Kingdom

13. A FIT was introduced in the UK in 2010 however this has now been closed to new applicants since March 2019. As noted on page 6 of the 2015 UK FIT review report[4] , the objective of the FIT was to:

    1) Encourage deployment of small-scale (up to 5MW) low-carbon electricity generation
    2) Empower people and give them a direct stake in the transition to a low-carbon economy
    3) Assist the public take-up of carbon reduction measures
    4) Foster behavioural change in energy use
    5) Help develop local supply chains and drive down energy costs.

[1] https://qpc.blob.core.windows.net/wordpress/2017/06/DOC16-2388-Solar-Final-Report-FINAL2.pdf
[2] https://www.energy.gov.au/sites/default/files/2019_aes_table_o_march_2019.pdf
[3] https://www.solaronline.com.au/content/qld-gov-slashes-solar-bonus-scheme
[4] https://www.cibse.org/getmedia/d9585c6f-7f74-4a10-a51c-40cb8c21d770/FIT_Evidence_Review.pdf.aspx

14. The UK FIT covered a range of small-scale low carbon generation technologies including wind, solar, hydro and anaerobic digestion from 15kW to 5MW. Of these technologies solar and wind were the most favoured in terms of actual take-up.

15. Similar to Queensland, the FIT attracted much interest and by the period ending March 2017, approximately 6GW of installed capacity (from almost 800,000 installations) had been enabled through the FIT programme[5].

16. The results to date in the UK have also been noticeable – renewable sources only provided 6.7% of the electricity generated[6] in the UK in 2009, the year prior to the FIT commencing.

17. FIT scheme generation supplied **2.5%** of UK electricity consumption in 2016/17[7]. In the space of approximately 7 years, new generation from the FIT scheme alone accounted for almost half of what renewables existed in the UK prior to the FIT.

18. The UK FIT review report notes that as early as 2015 many of the objectives were met, interest in the scheme was high, and renewable energy did increase overall. This report also notes that the electricity price paid by consumers (all of UK) also increased in exceedance of what was predicted. A more up-to-date report[8] further notes that:

    At the time the FIT scheme was introduced it was estimated that it would add £440m per year to consumer bills in 2020. These projections are no longer correct – the latest estimate for this is £1,600 million per year in 2020. Correspondingly, the impact on consumer bills will be greater than originally predicted.

19. While the FIT did result in additional renewable energy generation, as well as the jobs and economic benefits associated, there were also notable down-sides as a result of development incentivised by the FIT. In December 2015, a report was released noting some key changes to the FIT[9], primarily relating to decrease in the FIT rate which was significant compared to much smaller decreases that had followed (and been anticipated by the industry) for the years prior. As a result of these FIT cuts, a great deal of consented and developing projects right around the UK did not progress. I was personally responsible for cancelling multiple lease agreements and with landowners in the UK for projects EWP were delivering, as well as the associated grid connections – all of this due to the FIT cuts and the projects no longer being financially viable.

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[5] https://www.ofgem.gov.uk/system/files/docs/2017/12/feed-in_tariff_fit_annual_report_2016-17_0.pdf

[6] https://webarchive.nationalarchives.gov.uk/20101209110222/http://www.decc.gov.uk/en/content/cms/statistics/publications/dukes/dukes.aspx

[7] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/727138/Call_for_evidence-Future_SSLCG.pdf

[8] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/765647/FIT_Closure_Government_Response.pdf

[9] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/487300/FITs_Review_Govt__response_Final.pdf

20. In 2016, a number of companies like EWP and other wind and solar players in the UK market went into administration, citing cuts to the FIT[10] as the primary reason.

Considerations for New Zealand

21. Based on the above international examples, and my experience in developing wind energy projects in the UK, I can understand the opportunities that could arise from NZ establishing a FIT to help incentivise small scale renewable energy projects.

22. However, it is important to understand that NZ's electricity generation is notably different to the UK and Queensland – in that NZ already has a high proportion of renewable electricity generation. In 2018[11], renewable sources provided 84% of our electricity generation and for almost the last 50 years this has fluctuated from as low as 64.7% to 91.3%, averaging 77.5% overall per year.

23. Around the time the FIT schemes started in Queensland and UK, both of their renewable electricity generation sources were very low and well under 10%. For this reason I can understand the necessity for a FIT financial incentive to be rolled out to help increase the renewables supply. Common to both of these schemes though is the unavoidable rise in consumers power bills in order to pay for the FIT (this price gets included in consumers bills from the retailers).

24. Being that NZ has a high proportion of renewable energy already, it would be hard to justify introducing a FIT just for the sake of increasing our renewables base – when it would also likely come hand in hand with higher electricity bills for consumers and be most felt on those with less income.

25. I consider any FIT (or other financial incentive) for increasing renewables in NZ would need to have well defined objectives, which would most likely involve input from multiple government departments as well as the public. For example, the proposed National Policy Statement for Highly Productive Land (NPS-HPL) is currently being reviewed by the Ministry for the Environment and the Ministry for Primary Industries. If an overarching objective of a FIT was to help protect highly productive land, then this could be a great opportunity for productive land and increasing renewable energy. By this I mean, a FIT could be tailored to farmers to help incentivise them to install renewable energy on their farms for extra income and to help prevent their land from being sold as lifestyle blocks or for future urban rezoning – if these pressures became apparent in the future. Wind turbines do not take much land at all and are common place on farms where livestock can graze right up to them, as well as not losing much land area for crops. Another developing idea is known as agrivoltaics – where solar panels are raised slightly above the land or installed in a way that is complementary[12] to growing certain crops – see the photo below in Figure 1.

[10] https://renews.biz/39710/endurance-wind-uk-goes-bust/
[11] https://www.mbie.govt.nz/building-and-energy/energy-and-natural-resources/energy-statistics-and-modelling/energy-statistics/electricity-statistics/
[12] https://arstechnica.com/science/2019/09/crops-under-solar-panels-can-be-a-win-win/

Figure 1: Agrivoltaic scheme in Massachusetts, USA

26. Other possible objectives for a FIT could be to create community energy and income for a community. This could be achieved in a manner of ways – by complete community ownership or a co-op targeted at people within a certain area investing in a project for a modest individual return but a greater collective return in terms of a community fund that could be associated. As an example of this, the cover image to this submission is a photo of the 250kW Knockbain wind turbine located near Dingwall in Scotland. I prepared the planning application for this project, which was successfully consented and went on to become the first wind development in Scotland that is 100% owned by a co-operative[13], contributing to the mix and models of community energy projects in Scotland and the UK.

27. A former wind industry colleague in the UK, Nick Bowmar has provided comments of how he thinks a FIT could work in NZ, taking on learnings from the UK. Nick's comments area attached as Appendix 1. I agree with Nick's comments and would be interested to see if any of his suggestions could be taken into account for a possible FIT that has well defined objectives for NZ as mentioned above.

28. I also note previous research[14] completed in this area in NZ with a range of views from stakeholders including farmers, energy industry players, and the government – receiving a mixed bag of support. Overall however, this research does conclude that further promotion of a FIT could play a significant role in reaching NZ's renewable electricity target as well as international climate change objectives.

[13] http://www.communitypower.scot/case-studies/projects/dingwall-wind-co-op/
[14] https://www.researchgate.net/publication/241756458_The_suitability_of_a_feed-in_tariff_for_wind_energy_in_New_Zealand-A_study_based_on_stakeholders'_perspectives

First things first

29. I believe that the current NZ planning system prevents cost effective wind energy, especially at the smaller scale.

30. As part of the recent resource management system review discussion (RM review), I submitted comments[15] which demonstrated (on Page 13) the cost disparity for a similar size wind turbine project to get through planning in Scotland, Queensland and NZ.

31. In relation to the wind turbine development, the costs below would be for a development involving a single 50m high wind turbine (that in the NZ setting would have likely more than minor adverse landscape and visual effects meaning public notification is required).

32. An overall cost comparison table is shown below at Figure 2, with details further broken down in Appendix 6 of my response to the RM review. This compares total costs paid to Councils for the planning application between Highland Council in Scotland, Brisbane City Council in Australia and Wellington City Council in NZ.

Overall cost comparison (NZD)					
		HC, Scotland (current)	***HC, Scotland (proposed)***	***BCC, AUS***	***WCC, NZL***
Wind turbine		$1,045	$3,140	$6,297	$16,000

Figure 2: Cost comparison of planning/resource consent application fees

33. The costs of progressing with wind energy applications in NZ through the planning system are generally influenced by the requirement for public notification and subsequent hearing requirement. Other comments and suggestions I have provided in my response to the RM review look to improve the planning process and would hopefully result in less overall cost to be paid in resource consent application fees, which (in my opinion) would in turn act as more of an incentive for smaller wind energy developments to be developed.

Spatial planning

Technical feasibility and future opportunities

34. Even if we can make the planning/resource consent process easier, NZ lacks good spatial framework to understand the best places for future renewable energy near available grid capacity. This is necessary regardless of which renewable generation technology (or mix of) we choose to pursue in relation to NZ's comparative advantage.

[15] https://www.dropbox.com/s/dmvhxk9u00dpnc0/RM%20review_response%20to%20issues%20and%20options%20paper_Clint%20Betteridge.pdf?dl=0

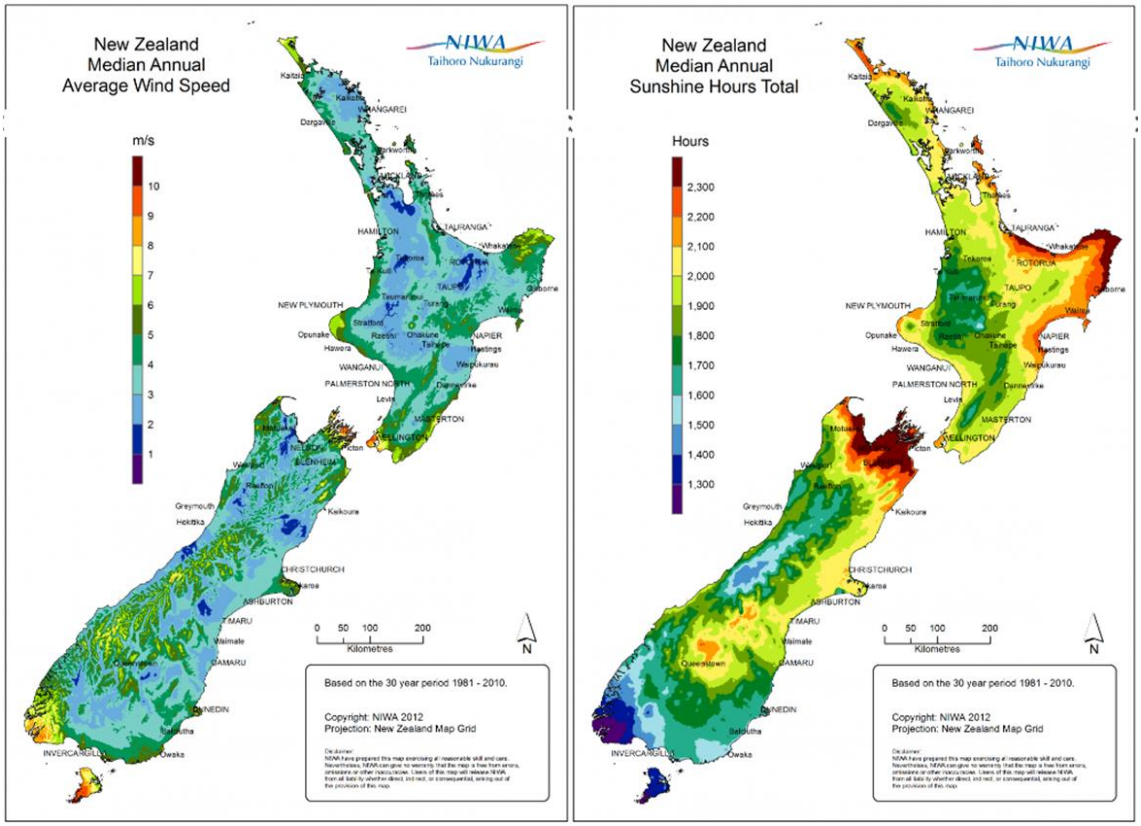

Figure 3: NIWA climate maps for wind speed and sunshine hours, 1981-2010

35. In terms of pursuing future renewable energy projects, this should also be based on good feasibility work focussing on locations with the best known resource, as indicated on the NIWA climate maps[16] in Figure 3 above. Grid connection limitation should be addressed as part of this feasibility work, acknowledging that existing local '3 phase' electricity networks should be able to handle taking on an amount of smaller new grid generation connections without the need for significant new reinforcement or new HV pylon lines. Although most of my comments are in relation to wind energy, I strongly believe a good balance of generations sources are required and will be interested to see how the solar energy industry develops – and at what different scales. Similar to wind energy, the install cost for solar PV has reduced considerably over recent years – as well as much improvement in the efficiency of the solar PV panels themselves and not to mention the increased opportunities for battery storage.

36. Transpower's report Te Mauri Hiko – Energy Futures[17] demonstrates predicted composition of NZ's electricity supply portfolio by generation type from 2015-2050 at Exhibit 11 of this report, indicating notable increases in the proportion of wind and solar compared to what exists currently. This report does not provide much commentary on the ownership models of future energy schemes, and any national energy strategy should be clear in what it wants to achieve – be it centralised/distributed generation, small/large scale, landowner and community renewables/big power companies only; or a mix of all of these approaches.

[16] https://niwa.co.nz/climate/national-and-regional-climate-maps/national
[17] https://www.transpower.co.nz/resources/te-mauri-hiko-energy-futures

Spatial framework in Scotland

37. In Scotland, a spatial framework to help identify appropriate areas for wind energy development is included within Scottish Planning Policy.

38. Page 38 of Scottish Planning Policy[18] sets out that:

Planning authorities should set out in the development plan a spatial framework identifying those areas that are likely to be most appropriate for onshore wind farms as a guide for developers and communities, following the approach set out below in Table 1.

Table 1: Spatial Frameworks

<table>
<tr><td colspan="3">Group 1: Areas where wind farms will not be acceptable:
National Parks and National Scenic Areas.</td></tr>
<tr><td colspan="3">Group 2: Areas of significant protection:
Recognising the need for significant protection, in these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.</td></tr>
<tr><td>National and international designations:
• World Heritage Sites;
• Natura 2000 and Ramsar sites;
• Sites of Special Scientific Interest;
• National Nature Reserves;
• Sites identified in the Inventory of Gardens and Designed Landscapes;
• Sites identified in the Inventory of Historic Battlefields.</td><td>Other nationally important mapped environmental interests:
• areas of wild land as shown on the 2014 SNH map of wild land areas;
• carbon rich soils, deep peat and priority peatland habitat.</td><td>Community separation for consideration of visual impact:
• an area not exceeding 2km around cities, towns and villages identified on the local development plan with an identified settlement envelope or edge. The extent of the area will be determined by the planning authority based on landform and other features which restrict views out from the settlement.</td></tr>
<tr><td colspan="3">Group 3: Areas with potential for wind farm development:
Beyond groups 1 and 2, wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.</td></tr>
</table>

39. A visual representation of how this spatial framework applies can be seen in the Highland Council map below at Figure 4.

[18] https://www.gov.scot/binaries/content/documents/govscot/publications/advice-and-guidance/2014/06/scottish-planning-policy/documents/00453827-pdf/00453827-pdf/govscot%3Adocument/00453827.pdf?forceDownload=true

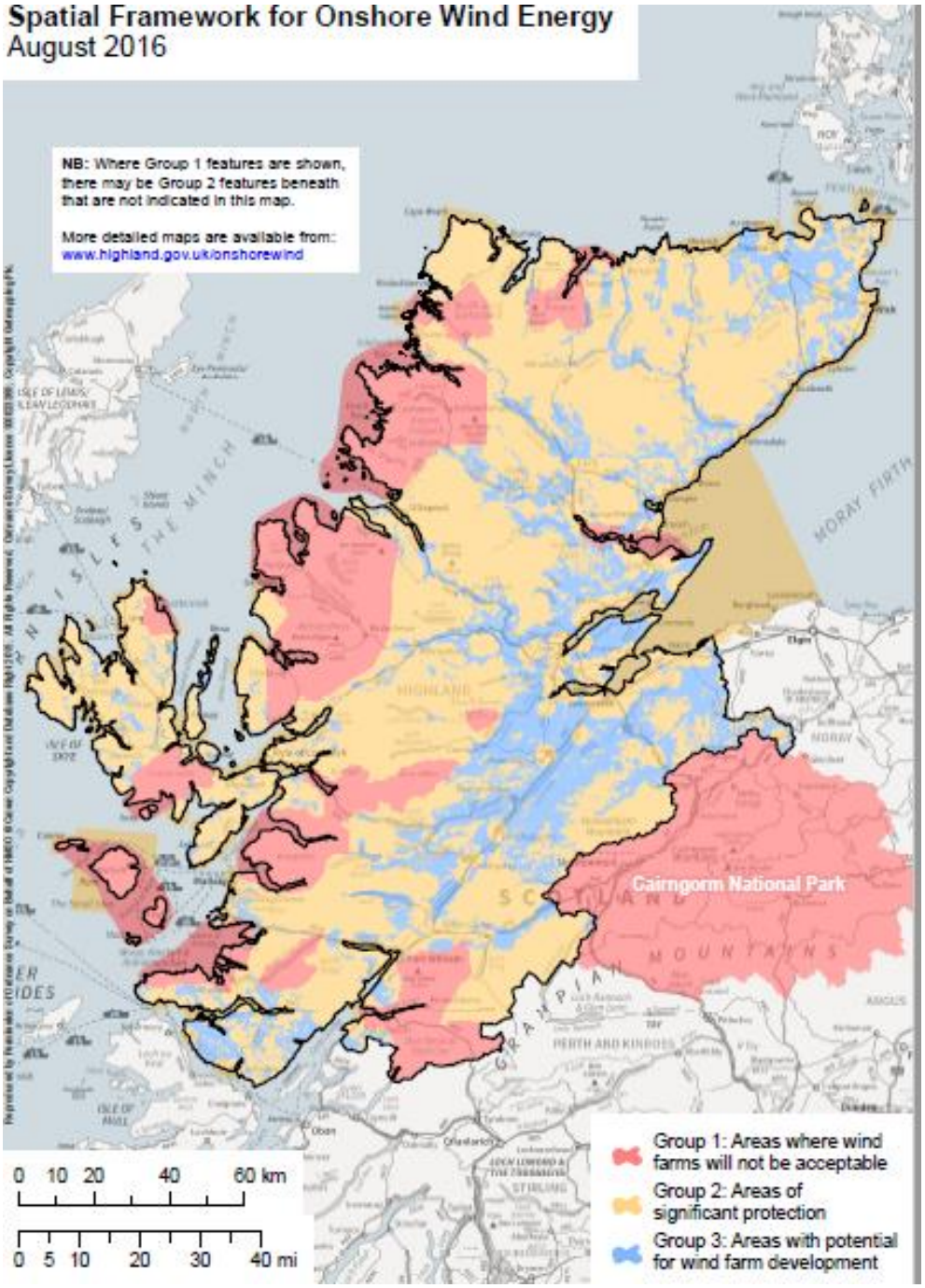

Figure 4: Highland Council spatial framework for onshore wind energy

40. After removing Group 1 areas from a wind energy development proposal, Group 3 is the area with potential for wind farm development, subject to detailed consideration against identified policy criteria.

41. Wind farm development can occur in Group 2 areas, however further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.

42. A good example of how this spatial framework can help to deliver wind energy projects is demonstrated by a wind turbine project I was responsible for delivering for Endurance Wind Power near Wick, in the Highland Council area at the north of Scotland.

43. As well as manufacturing a number of wind turbine models, Endurance Wind Power (EWP) had a development arm which sought to arrange leases with land owners throughout the UK, in order to install a selected EWP wind turbine and collect revenue for a period of 20 years under the FIT scheme detailed earlier in this submission. The development arm (Pro-Dev) were responsible for undertaking site feasibility and design, arranging leases, obtaining grid connection, obtaining planning permission and finally co-ordinating the turbine delivery and project construction.

44. The example project mentioned above was one of these Pro-Dev projects and was named Upper Northfield 2 (UN2), being that it was the 2nd 80kW wind turbine to be installed at Upper Northfield Farm. The first was installed a few years earlier and after monitoring this turbine for the following years, it was considered that a 2nd wind turbine at this farm would be worth pursuing. Fine Energy was the EWP development partner who lodged the planning application.

45. The planning application for UN2 was initially refused[19] on eight to five vote following consideration by The Highland Council North Planning Applications Committee for the following three reasons:

    1. *The proposal, in combination with the existing turbine, is contrary to Policy 67 (Renewable Energy Developments) of the Highland-wide Local Development Plan as it would result in a pair of excessively-scaled moving structures that would have significantly detrimental visual impacts and alter perception of the nature of the landscape character of the surrounding area. This would be to the detriment of individual and community amenity, with impacts on both the local community and the Caithness tourist industry.*

    2. *The proposal is contrary to Policy 28 (Sustainable Design) and Policy 57 (Natural, Built and Cultural Heritage) of the Highland-wide Local Development Plan and Scottish Planning Policy as it would result in the siting of a second tall moving structure on this site which cumulatively would fail to demonstrate sensitive siting and high quality design in keeping with local character and the natural environment and alter perception of the nature of wider landscape to its detriment.*

    3. *The proposal is contrary to Policy 61 (Landscape) of the Highland-wide Local Development Plan, failing to reflect or enhance the landscape characteristics and special qualities of the area; the second wind turbine as proposed would be of an inappropriate scale and alter perception of the nature of the wider landscape resulting in unacceptable cumulative impacts with the existing wind turbine on the site and other consented wind energy schemes in the wider area.*

46. It is also worth noting that these are the same three reasons for refusal referred to in the planning officer's recommendation report to the committee[20].

[19] https://www.dropbox.com/s/o84quk14sse714d/14_03832_FUL-ISSUED_COUNCIL%20DECISION-825908_UN2.pdf?dl=0

47. I recommended the decision to appeal the decision to Scottish Ministers (the appeal pathway when applications are refused at committee), considering that the proposal was in fact acceptable under Scottish Planning Policy and the Local Development Plan.

48. The appeal was eventually allowed and planning permission was granted, and this wind turbine was then later installed.

49. The appeal application[21] rightfully noted that no objections to the application by members of the public or any internal Council advisors or statutory consultees. The appeal application also noted that, in terms of the SPP spatial framework [for wind energy]:

> *It is considered that the site falls within Group 3. As such, it is an area with potential for wind farm development. It is close to Wick, and just within the 2km community separation distance, but will have no discernible impact on this settlement, which is accepted by the Council.*

50. Point 28 of the appeal decision[22] noted:

> *This is followed up in Scottish Planning Policy, which sets out development management criteria against which energy infrastructure developments should be assessed. Many of these apply in this case, but none suggests the proposed turbine should not be granted planning permission.*

51. Although consistency with the spatial framework was not the only matter being assessed as part of the appeal (would also contribute to Scotland's renewable energy target amongst other things), it was nevertheless still very important as it dealt with the number one issue that generally faces wind energy projects – is the location within the landscape acceptable?

52. In the event that this spatial framework did not exist, it would have been far more difficult to appeal the decision and I suspect we (EWP) would not have bothered trying to appeal as the chances of a successful appeal would have been much lower.

<u>Spatial Framework for New Zealand</u>

53. Taking the Scotland example above and adapting this to NZ is shown below at Table 2.

[20] https://www.dropbox.com/s/ljn8trcsyvrs84m/14_03832_FUL-COMMITTEE_REPORT-825899_UN2.pdf?dl=0
[21] https://www.dropbox.com/s/0iwrhmsezd555yd/266737_UN2%20appeal%20application.pdf?dl=0
[22] https://www.dropbox.com/s/d7jaavx8eo0jp7v/293248_UN2%20appeal%20decision.pdf?dl=0

Table 2: Spatial Frameworks - NZ

<table>
<tr><td colspan="3">Group 1: Areas where wind farms will not be acceptable:
National Parks, Conservations Area, Reserves and Marginal Strips (DOC Public Conservation Areas)
Regional Parks.
Outstanding Natural Landscapes and Features.</td></tr>
<tr><td colspan="3">Group 2: Areas of significant protection:
Recognising the need for significant protection, in these areas wind farms may be appropriate in some circumstances. Further consideration will be required to demonstrate that any significant effects on the qualities of these areas can be substantially overcome by siting, design or other mitigation.</td></tr>
<tr><td>International and national designations:
World Heritage Sites;
Ramsar (wetland) sites;
Significant Natural areas;
Designated Heritage areas (personal suggestion based on the Scottish example)</td><td>Other nationally important mapped environmental interests:
Local valued amenity landscapes i.e. ridgelines, hilltops
Special amenity landscapes (modified by human activity)
Sites identified as NZ Wars Battlefields (personal suggestion based on the Scottish example)</td><td>Community separation for consideration of visual impact:
an area not exceeding 2km around cities, towns and villages identified on the District Plan with an identified settlement envelope or edge. The extent of the area will be determined by the local planning authority based on landform and other features which restrict views out from the settlement.</td></tr>
<tr><td colspan="3">Group 3: Areas with potential for wind farm development:
Beyond groups 1 and 2, wind farms are likely to be acceptable, subject to detailed consideration against identified policy criteria.</td></tr>
</table>

54. As an indicative visual example of this spatial framework, see Figure 5 below:

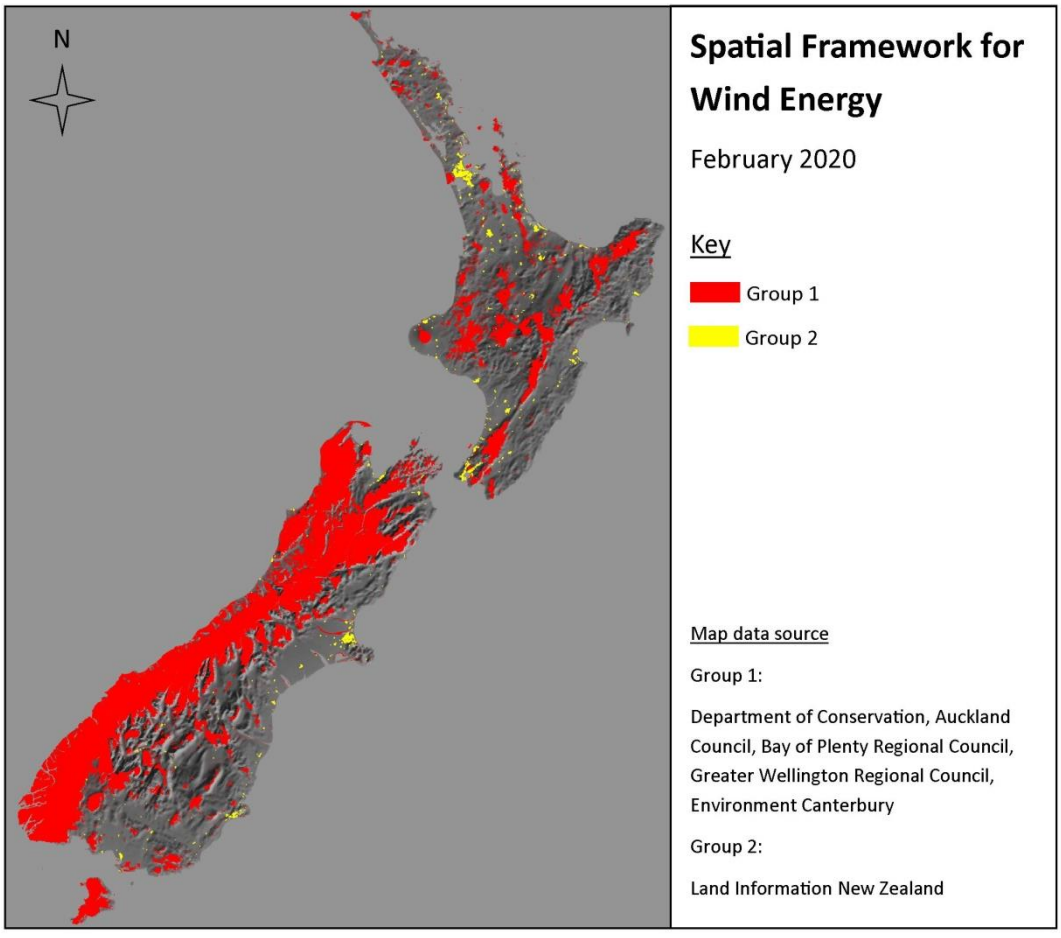

Figure 5: NZ spatial framework map for wind energy

55. It is important to note that only the areas underlined in Table 2 have been included, as well as basic Land Information New Zealand (LINZ) data showing residential areas. In relation to the other important areas such as outstanding natural landscapes and features, significant natural areas and local valued amenity landscapes; these have not been identified on this map due to lack of national coverage and consistency – a point discussed later in this submission.

56. A point I wish to raise at this point is the overall context of our landscape resource. In the Scottish framework, this excludes National Parks and National Scenic Area's which I do not disagree with.

57. For NZ I have proposed all Department of Conservation (DOC) protected land, as well as regional parks, as shown in red above. As noted in this report[23], as of July 2009, 8,763,300 hectares (ha) of NZ's land (or 33.4 per cent) was legally protected for the primary purpose of conserving biodiversity. Although the primary purpose is stated as conserving biodiversity, I consider that landscape protection is also achieved in these areas by default. I am not aware of any wind farms being installed within any legally protected DOC land.

58. So considering that one third of NZ's land is legally protected by DOC, this only leaves us with two third's to find appropriate locations for renewable energy.

59. It is this 'two third's' context that I consider needs to be taken into account when finding room in our landscapes outside of the legally protected areas.

60. Perspective is important and we are fortunate to have many great national, regional and conservation parks in NZ. I have never heard of a wind energy project proposed for such a protected area (which makes sense), but I think collectively people need to have more perspective when wind turbines are proposed on rural land outside of these highly valued conservation/recreation areas.

61. Difficulties with consenting smaller scale wind energy schemes in NZ are discussed on pages 55-68 of the MBIE discussion document being responded to in this submission. The Blueskin case study referred to ended up being reduced from three to one 110m high wind turbine, which is a lot higher than the 50m example discussed above, but nevertheless could not get past adverse effects on landscape values – after the initial Council refusal was appealed to the Environment Court which upheld this[24].

62. In terms of Blueskin, I acknowledge that this was located within a significant natural landscape area (which I consider to be given a fairly high degree of importance under section 7(c) of the RMA, albeit not as high as outstanding natural landscapes referred to in section 6(b)), but I find it troubling that the RMA itself does not seem to offer any perspective in acknowledging that such a site is actually quite far down the relative pecking order in terms of valued areas/landscapes of NZ.

[23] https://www.mfe.govt.nz/sites/default/files/media/legally-protected-conservation-land-snapshot.pdf

[24] https://maorilandcourt.govt.nz/assets/Documents/Publications/2017-NZEnvC-150-Blueskin-Energy-Ltd-v-Dunedin-City-Council.pdf

63. My opinion is that this pecking order would look something like - national park/regional park/conservation park/outstanding natural feature and landscape/significant natural landscape. By taking this view, that would mean the Blueskin project that failed in the Environment Court on unacceptable landscape effects, failed on a landscape that is actually valued about 4 notches below the top of the pecking order. To me, this really begs the question of how many more notches below the pecking order do people need to go in order to accept wind energy projects through planning? Or better still, how do we re-visit the pecking order to bring a bit more pragmatism to this - especially due to the fact that wind turbines need height to capture the best wind resource and operate successfully.

Landscape Character Assessment

64. A contributing factor to the Scottish framework is the national Landscape Character Assessment coverage.

65. This was commissioned by Scotland's national nature agency, Scottish Natural Heritage (SNH), in partnership with others between 1994 and 1999[25] and mapped and described the landscape character for all of Scotland (mostly at a scale of 1:50,000).

66. As noted on the SNH website, each study typically covered a local authority area, and provided the landscape foundation for natural heritage and planning policymaking. The studies have been used widely in the development planning system.

67. Acknowledging that NZ is considerably larger than Scotland in land area (over 3 times the size), I do believe that undertaking a similar national LCA for NZ would be hugely beneficial for future land management – for both protection and development. An example of the national LCA map[26] is shown below at Figure 6.

[25] https://www.nature.scot/professional-advice/landscape/landscape-character-assessment/landscape-character-assessment-scotland
[26] http://www.rmla.org.nz/wp-content/uploads/2016/09/rmla_lgnz_seminar_rhu_20100713.pdf

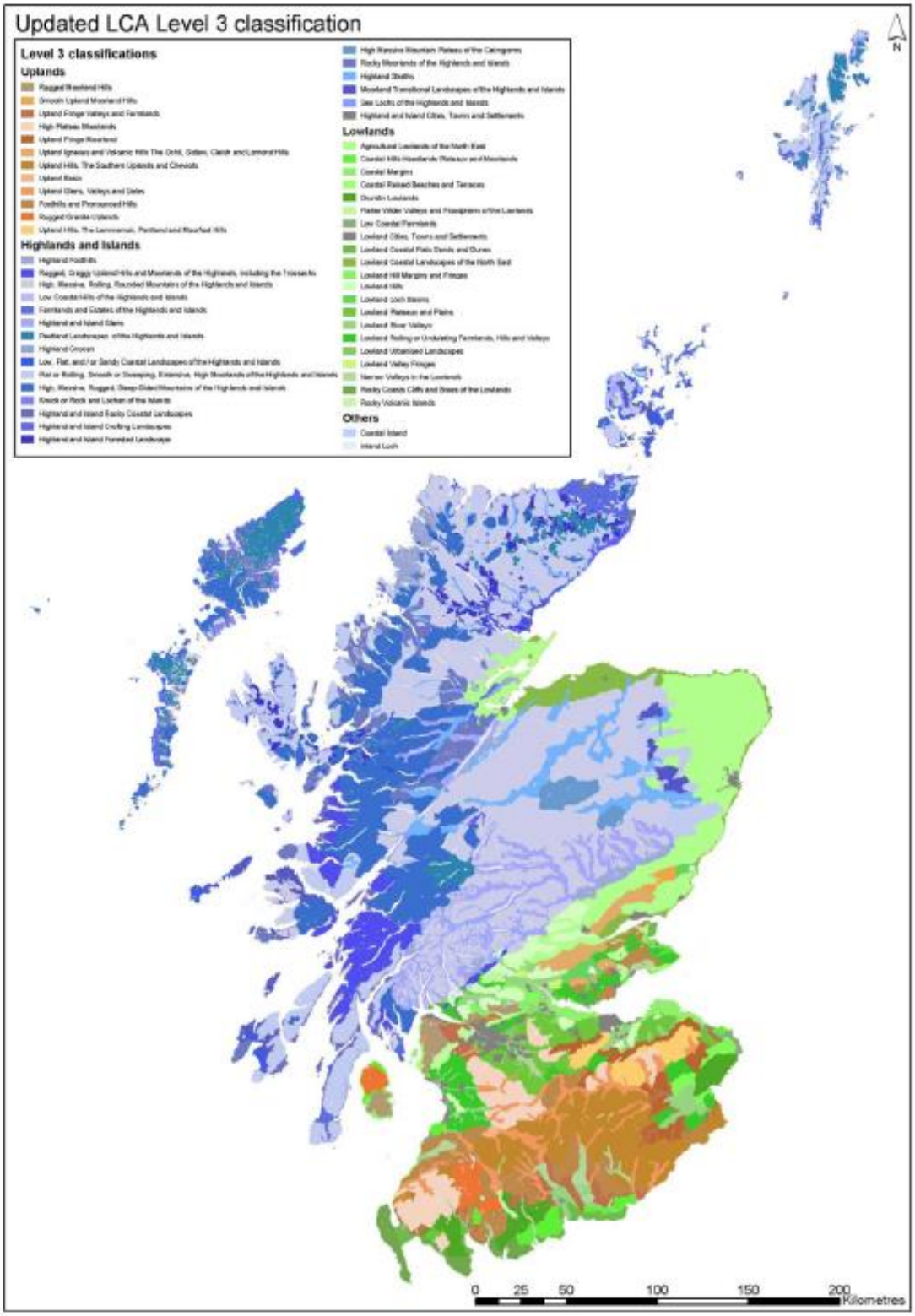

Figure 6: Scotland national LCA map

DOC should designate

68. Matters addressed above highlight:

    - The benefits and need for a national spatial framework
    - The lack of national coverage and consistency in relation to outstanding natural landscapes and features, significant natural areas and local valued amenity landscapes
    - The benefits and need for a national landscape character assessment

69. Since the RMA was first enacted[27] in 1991, matters of national importance under Part 2 of the Act included:

    - 6(b) The protection of outstanding natural features and landscape from inappropriate subdivision, use, and development; and
    - 6(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna

70. These two matters still exist in the very same place of the RMA today and have never been amended as part of the many amendments to the Act since 1991.

71. Although my focus here is on outstanding natural features and landscapes, I also think areas of significant indigenous vegetation and significant habitats of indigenous fauna should be 'grouped' in this discussion as their protection is equally important as a matter of national importance. Furthermore, although significant natural areas are more concerned with conservation rather than landscape, these are considered to be important areas to include when preparing a spatial framework. I will also raise this in a separate submission to the National Policy Statement for Indigenous Biodiversity (NPSIB) currently under consultation by the Ministry for the Environment.

72. In 2004, the Environmental Defence Society (EDS) published a report[28] entitled 'A Place to Stand', which as stated on their website explores: *the catastrophic loss of New Zealand's special places to inappropriate subdivision and development.*

73. It is useful to note also that EDS are currently working on a new report[29] on national landscape matters and this is due to be published in July 2020.

74. As noted on pages 12-13 of the 2004 EDS report, the six main type of statutory bodies with a potential function related to protecting important landscapes under the RMA are listed, as well as commentary on why many of them fail to carry out these functions for a variety of reasons, the bodies and reasons for failure noted as:

    - City or district (local councils) – the protection of important landscapes has largely failed on these local bodies with little external support.

[27] http://www.nzlii.org/nz/legis/hist_act/rma19911991n69227/
[28] https://www.eds.org.nz/our-work/publications/out-of-stock-books/a-place-to-stand/
[29] https://www.eds.org.nz/our-work/protecting-new-zealands-natural-landscapes/

- Regional councils – [the lack of landscape issues being addressed in policy statements] appears largely due to the overlapping functions of regional and district councils in respect of landscape protection, and a consequence reluctance of regional councils to become involved in a function impacting on land use which is more clearly within the jurisdiction of local councils.
- Ministry for the Environment – there is currently no national policy statement on landscape.

75. Although the EDS report was published 16 years ago, I would consider the above failure notes to be just as relevant today, even in spite of *some* city or district Councils and regional councils having now identified outstanding natural features and landscapes in their district plans and policy statements respectively.

76. However, just because *some* Councils have achieved identifying such areas and putting them on a map, it is still not clear that there is a consistent methodology that has gone into this exercise.

77. As noted as part of a RMLA/LGNZ seminar[30] on the issue of landscape in 2010, a stocktake was undertaken to show the provision of outstanding natural landscapes in regional policy statement's (RPS) and it was clear that there were was still a good number of RPS's that did not identify outstanding natural landscapes and almost all of them had no guidance on ranking/weighting or methodology on landscape assessment.

78. To provide more specific detail on where landscape protection has failed the process/outcome intended by the RMA:

- Page 13 of the EDS report notes: *arguably, the [Environment} Court has become the prime policy maker on landscape protection issues, in the absence of central government direction.*
  - As a specific example of this, Page 63 of the EDS report notes that the: *The Environment Court has taken a leading role in arbitrating the final form of landscape provisions in the [Queenstown Lakes District Plan], going so far as to attach the wording of detailed plan provisions to its decisions*
- Greater Wellington Regional Council's Proposed Landscape Plan 1997 was withdrawn due in part to negative feedback from the individual landowners[31] angry at the idea of the regional council identifying important landscapes/features on their land without due compensation.
- John Hudson's assessment on regional landscape inconsistency[32] provides a great visual example of how on either side of the regional council boundary between Horizons and

[30] https://www.rmla.org.nz/2010/10/19/rmla-lgnz-roadshow-the-issue-of-landscape-achieving-consistency-and-clear-direction-for-the-identification-and-management-of-landscape-values-2/
[31] http://www.gw.govt.nz/assets/council-reports/Report_PDFs/2000_127_2_Attach.pdf
[32] https://www.nzaia.org.nz/john-hudson.html

Hawke's Bay, this landscape is identified as outstanding within Horizon's area and not given any mention at all in Hawke's Bay area.

79. To the above extent, it is clear that Councils have failed to protect outstanding natural features and landscapes over the past 29 years since the RMA was first enacted. There are clear instances of regional inconsistencies and there is a clear need not just in terms of protecting these areas, but also in providing spatial framework for new renewable energy development sites.

80. I truly believe that NZ's government agency charged with conserving NZ's natural and historic heritage, the Department of Conservations (DOC), would be far better placed to take over the responsibility of the identification and protection of the outstanding natural features and landscapes, similar to how SNH operates in Scotland.

81. This is a matter of national significance and as such should be entrusted with a national agency with to enable this. DOC already have well established offices throughout NZ and (with a few changes and added resources) would be well equipped to engage with regional and local authorities, tangata whenua, landowners, and all other relevant stakeholders in delivering on such national protections.

82. Once NZ can have a true picture of all outstanding natural features and landscapes, we can then get on with co-ordinating both a spatial framework and a national LCA for new renewable energy projects, which at the same time would be a real investment and tool for future development in NZ as our population grows and puts likely more and more pressure on our most valued natural features and landscapes.

83. We need to walk before we run. Spending time planning and establishing a better spatial framework, as well as considering some small changes to improve the institutional functions of those bodies who are responsible for delivering such a framework (including the data that goes into it) would be a great asset for the future of NZ. If we get started on this today, I would be optimistic that we could have such a framework in place over the next 5-10 years.

Conclusion

84. Although not a response to every question in the discussion document, some detailed responses have been included above. I consider there are many areas that could be addressed to help enable increased renewable energy development in NZ and would be happy to further assist in clarifying or elaborating on any of the comments made in this submission.

85. We collectively need to find appropriate financial incentives that work for increasing renewable energy in NZ, and there is an incredible opportunity to get things started on a spatial framework which fosters more understanding and protection of our most valued natural landscapes and features.

Appendix 1: Comments from Nick Bowmar

The below comments have been provided by Nick Bowmar. Nick was a former industry colleague of mine when we both worked in the UK and he has considerable domestic and international experience in the wind energy industry. Nick is currently involved in wind farm development in Australia.

There has been a lot written on the benefits of a form of Feed-in-Tariff (FIT) to promote the acceleration of small to medium scale renewable energy projects. The following submission is based on my experience gained developing several FIT projects in United Kingdom, and how such a mechanism could be adapted and improved for New Zealand to maximise the benefits and minimise costs.

The UK FIT scheme supported projects via a guaranteed price/rate for every unit of electricity that the project generated, for 20 years. This was on top of any payment earned from units of electricity exported to the grid, for the life of the project. The scheme made projects viable, and bankable.

The payment rate depended on technology (predominately wind & solar) and nameplate capacity of the project. Capacity groupings were tiered (for example for wind, 15-100 kW, 100-500 kW, 500-1500 kW, 1500-5000 kW), with smaller generators being eligible to higher rates. While good intentioned, this arguably led to "gaming" of the scheme by some wind turbine manufacturers. Larger turbines could be de-rated to limit their capacity (kW) to qualify for a lower tier, and earn a higher rate (thereby earning more, to produce less).

In hindsight, the tiers should have applied to generation (kWh), not capacity (kW). Under such an arrangement, all turbines would have been eligible for the high rate for the first x kWh, then progressively lower rates for higher levels of generation; more like a tax system.

The FIT rates were initially set very high, although the scheme also contemplated a gradual reduction of the FIT rate over time as the participation in the scheme increased (N.B. a commissioned project could lock a rate in for 20 years, but subsequent projects commissioned after such a reduction, would be locking in a slightly lower rate). The lowering of the rate, also served as a signal to the industry, on the level of funding still available.

The scheme initially required projects to be built & commissioned before they could apply for the FIT scheme accreditation. This created uncertainty on whether a project would be eligible, and what rate would be applicable. The risk of a substantially smaller rate than expected (although small), still made the projects difficult to finance.

This issue was fixed with preliminary accreditation, which enabled projects to apply for and lock in a rate for 12 months at financial close (i.e. before construction began), subject to a few conditions. The most significant of which required the project to be fully commissioned within 12 months of preliminary accreditation acceptance. For wind projects with long lead times, this was a very tight window. A project that missed the commissioning deadline by just hours, would have to reapply for accreditation and accept any reductions that occurred in the intervening 12 months.

The high initial rates, and subsequent reductions (which were faster than anticipated), caused many flow-on problems, as listed above. OFGEM who were administering the scheme, couldn't keep up with applications, causing further uncertainty. In hindsight, a lower initial rate without reductions would have made the scheme easier to navigate and perhaps spread the pool of funds over more projects.

As the FIT ended, a large portion of accredited projects were never built (meaning the funds allocated to them were never spent, and never re-allocated, meaning some great projects missed out entirely). While I favour a mechanism to support small to mid-sized renewable projects, and a modified FIT could be a useful start, I think there is an opportunity to create a more sustainable scheme. A sustainable scheme would support projects that already had merit and would maximise the value for the taxpayer (or electricity user).

For example:

- The scheme could simply provide a contractual hedge (a contract for difference, or call option) that would guarantee a rate per unit for the project. Essentially, the scheme would top-up the shortfall between the wholesale price the project earned normally, and the guarantee price. Over time, if the wholesale power price was higher than the guarantee price, the difference would be paid back into the scheme by the project.

- The guarantee price could be set at a relatively modest rate. Even just NZ $100/MWh would enable a lot of projects to be built. Note a guarantee of $100/MWh, may initially equate to a top-up of just ~$40/MWh today, and even less over the life of the hedge.

- It may even be possible to get corporate support of a scheme, so that such a hedge sat between the project (or pool of projects) and the corporate, with the scheme administrator just providing support. Corporate PPAs are now common in the mainstream electricity industry around the world.