

CASE STUDY

HARAPAKI WINDFARM

2021 - 2024



INSTANT GREEN



Meridian.

HICK

BROS CIVIL

CLIENT

Meridian Energy/Hick Bros

PROJECT

Harapaki Windfarm

SCOPE

A greenfield project with over 1.2 million m³ of earthworks over three seasons.

Our scope was to progressively stabilize and revegetate earthworks areas throughout the project.

In total we completed 110 ha of Hydro Mulch.

PRODUCTS USED

Stabi-Mulch NZ Wooden Fibre

- Application rate 2500-3500kg/ha dependent on site specifics, slope gradient etc
- A mix of Pasture seed blend, winter active species to encourage growth in the winter periods
- Starter Fertilizer
- Polymer to provide further temporary stabilisation

Soil Blanket

- Application rate 3000kg/ha. To vegetate cut faces with little or no organic matter

Dust Loc

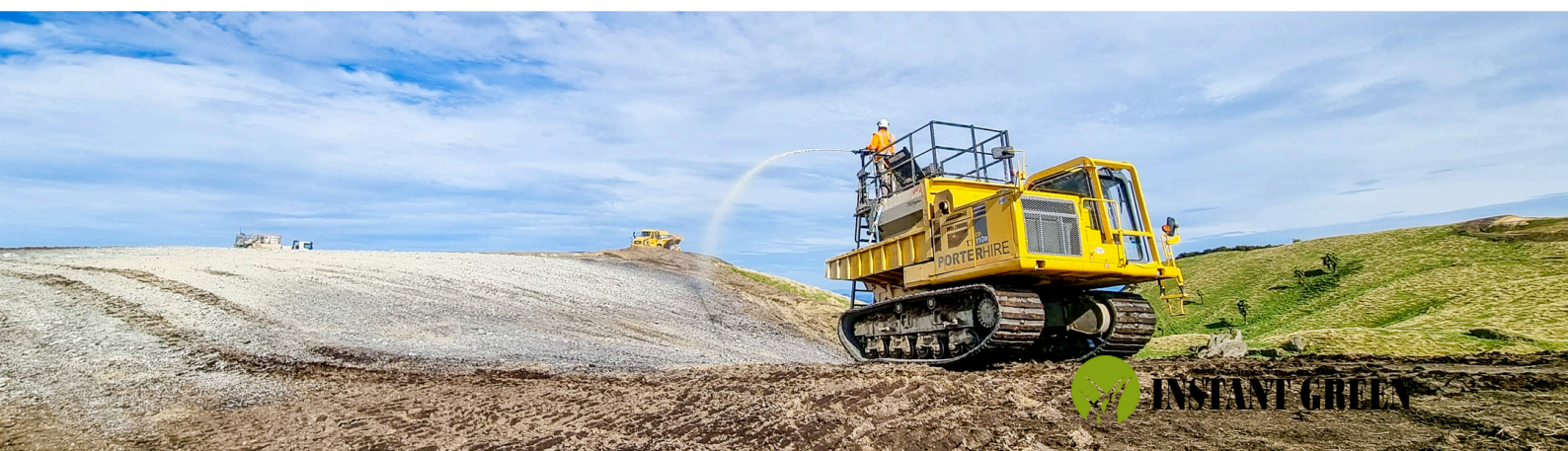
- To stop dust from haul roads, increase visibility and reduce the cost of water cart hireage



Having originally priced the project in October 2019, Covid lockdowns delayed project commencement until June 2021. Since our first establishment in 2021, we have completed over 1,100,000m² of hydro mulch and Soil Blanket, as we stabilized and revegetated dumpsites, cut batters, sediment ponds, fill sites, and various earthworks areas throughout the project.



Although we were able to access majority of areas with our 4x4, 6x6 and 8x8 trucks, in the early stages to access certain areas we mobilized a Marooka tracked machine and mounted one of our smaller hydroseed units onto it. This meant we could still stabilize sites that were only accessible by tracked machine, which was extremely helpful to our client and showed our commitment to completing the project in full and on time.



In the peak of construction, we had up to three crews working across six different zones. Our record day onsite we completed 38,000m².

Having the capability of our large-scale equipment meant we could close out areas quickly and take advantage of the small fine weather windows.

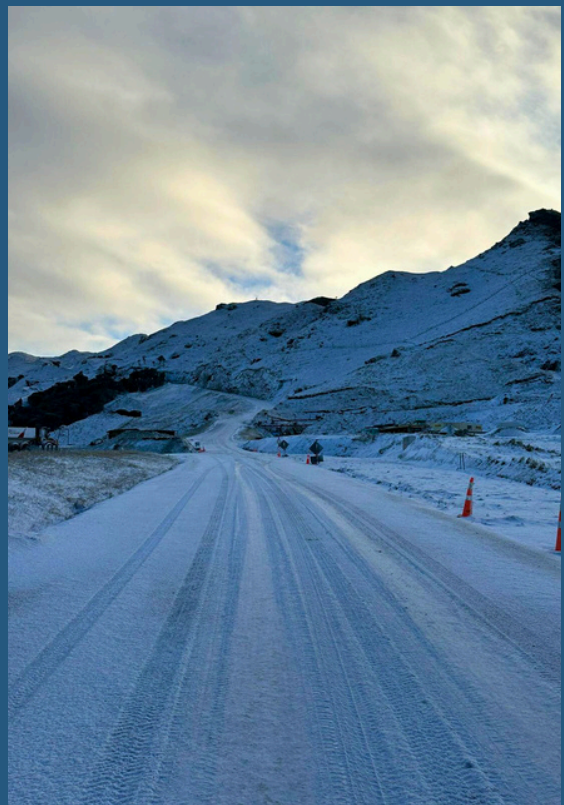
Throughout the project we experienced some extreme weather conditions including snow, lightning, thunder and up to 200kph winds on some occasions.

Working around these conditions was challenging and meant constantly keeping in contact with project managers onsite and keeping an alert eye on weather forecasts. Working through these conditions is a testament to the grit of our experienced and qualified team.

100mm rain events were not uncommon, being at an elevation between 700m and 1100m above sea level. Therefore, ensuring we achieved even coverage with our application rate of 2500kg/ha was important to avoid washouts and subsequent rework.

Working at such high elevation also meant soil temperatures dropped well below optimal, we countered this by adding winter active species to encourage grass strike.

In some scenarios soil temperatures were below 6 degrees Celsius so we couldn't achieve grass strike. In this case, the earthworks areas would be stabilized with the hydro mulch, then in spring once it warmed up the grass would germinate and come away.





Being able to stabilize areas with the cannons on our trucks meant we could reach up to 100 meters horizontally and 45 meters vertically from the truck, without having to run hoses or have staff members working on uneven ground. For the large cuts, we were able to revegetate all of these with our cannons, whereas other hydroseed contractors would have needed knuckle booms or similar to access the top of these cuts.

Towards the latter end of the project we also had to run up to 200m of hose to access and revegetate areas only accessible on foot.



SOIL BLANKET

Using Our Soil Blanket we were able to revegetate near vertical cut faces throughout the site. This was ideal for mainly cut batters that were to steep to topsoil, but needed revegetating in view of long term stabilisation.



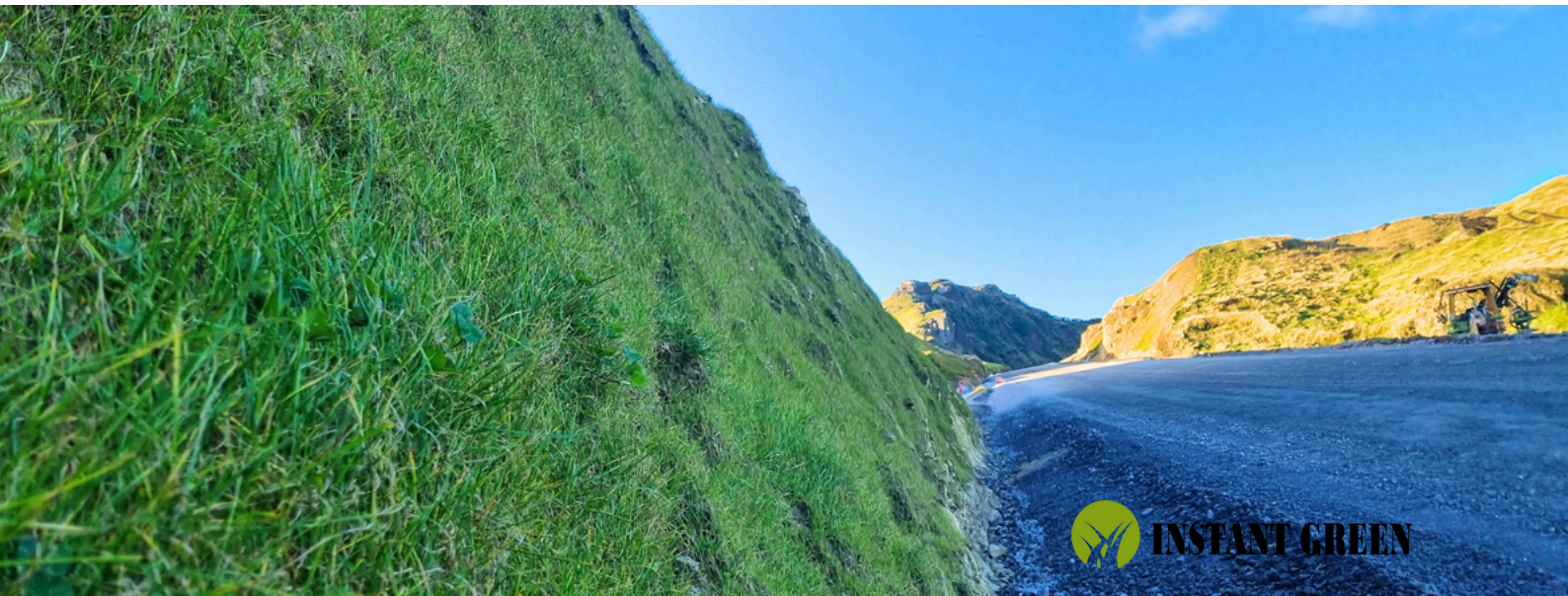
Soil blanket is our own innovation, with Organic Matter, Mycorrhizae Fungi and soil biology added to our Hydro mulch mix.

This provides extra nutrients for the seed and encourages successful vegetation long term by putting life back into the soil and getting soil biology going.

Despite the tough conditions onsite, including heavy rain, snow, high winds etc.

Cut batters that our soil blanket was applied to are still well vegetated today, and stabilizing the faces with a well established root structure.

Included in our soil blanket mix was our Erosion control seed blend, which after 12 months of successful germination, some species can develop a root structure up to 30cm deep!



DUST LOC

We applied approximately 150,000 litres of Dust Loc. This was on the high traffic haul roads so they could use these without the need of constantly running water carts.

This had cost benefits as our client could keep their team and machines moving earth, rather than sitting in water carts keeping dust down.

Just one application of Dust Loc would last 3 - 6 months without any further watering required.



"I can highly recommend Instant Green's Soil Blanket. Despite challenging conditions including low temperatures, steep faces and minimal to no soil depth, we have achieved good grass strike relatively quickly."

PETER RALPH

Sustainability and Environmental Manager Harapaki Windfarm

Without a doubt one of our most challenging projects to work on and to date, our single largest project we have completed.

Completing this project could not have been done without clear communication and understanding from the excellent Hick Bro's project management team.

We are proud to have been included in Hawkes Bay's first windfarm and look forward to adding other similar projects to our portfolio across New Zealand as we transition to cleaner, greener energy resources.

As environmental and earthworks manager for the Harapaki Windfarm, this was one of the most challenging projects we have completed, in terms of steep and exposed terrain, extreme weather conditions including snow and gale force winds.

Instant Green was engaged to complete the hydro mulching throughout the project. Their pro-active communication, high output equipment and practical approach to any challenges brought value to this project, knowing we could leave them to it and they would get the job done.

Their team mobilised efficiently, maintained excellent communication throughout the project, and were highly responsive to the evolving needs on site. The quality of their work, particularly the even application of mulch across difficult terrain and their ability to meet tight timeframes, directly supported our erosion and sediment control objectives. Being a windfarm, fine weather days were few and far between, but when we had them, Instant Green's large scale equipment meant they could make the most of these and stabilise large areas quickly before the weather set in again.

Of note was their use of locally sourced wooden fibre mulch, Stabi-Mulch. This aligned with our sustainability goals by reducing the carbon footprint of the operation.

Instant Green's fleet and capability are unmatched in New Zealand, and their performance at Harapaki clearly reflected that.

Through the summer, we also used Instant Green's Dust-Loc product for haul roads on high traffic areas throughout the windfarm. This saved us significant labour and resource on these areas as we no longer had to run water carts once Dust-Loc was applied.

I have no hesitation in recommending Instant Green for any large-scale revegetation or hydro mulching projects. They are a reliable, experienced, and environmentally conscious contractor, and their capacity is un-matched.

Tom Gaddum – Director, Hick Bros

Signed

A handwritten signature in black ink, appearing to be 'Tom Gaddum', written over a horizontal line.

As windfarm construction in New Zealand increases, Instant Green has expanded their capacity to deliver large-scale infrastructure projects across the country, making them your go-to partner for a high trust, no-nonsense company with the capabilities and management team to meet your needs.

It doesn't just stop at windfarms, we are capable of delivering any large scale revegetation projects, including roading, mine rehabilitation, Land development and any other bulk earthworks projects.

Get your project completed on time, on budget with Instant Green.



0211 930 931



ashton@instantgreen.co.nz



www.instantgreen.co.nz



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