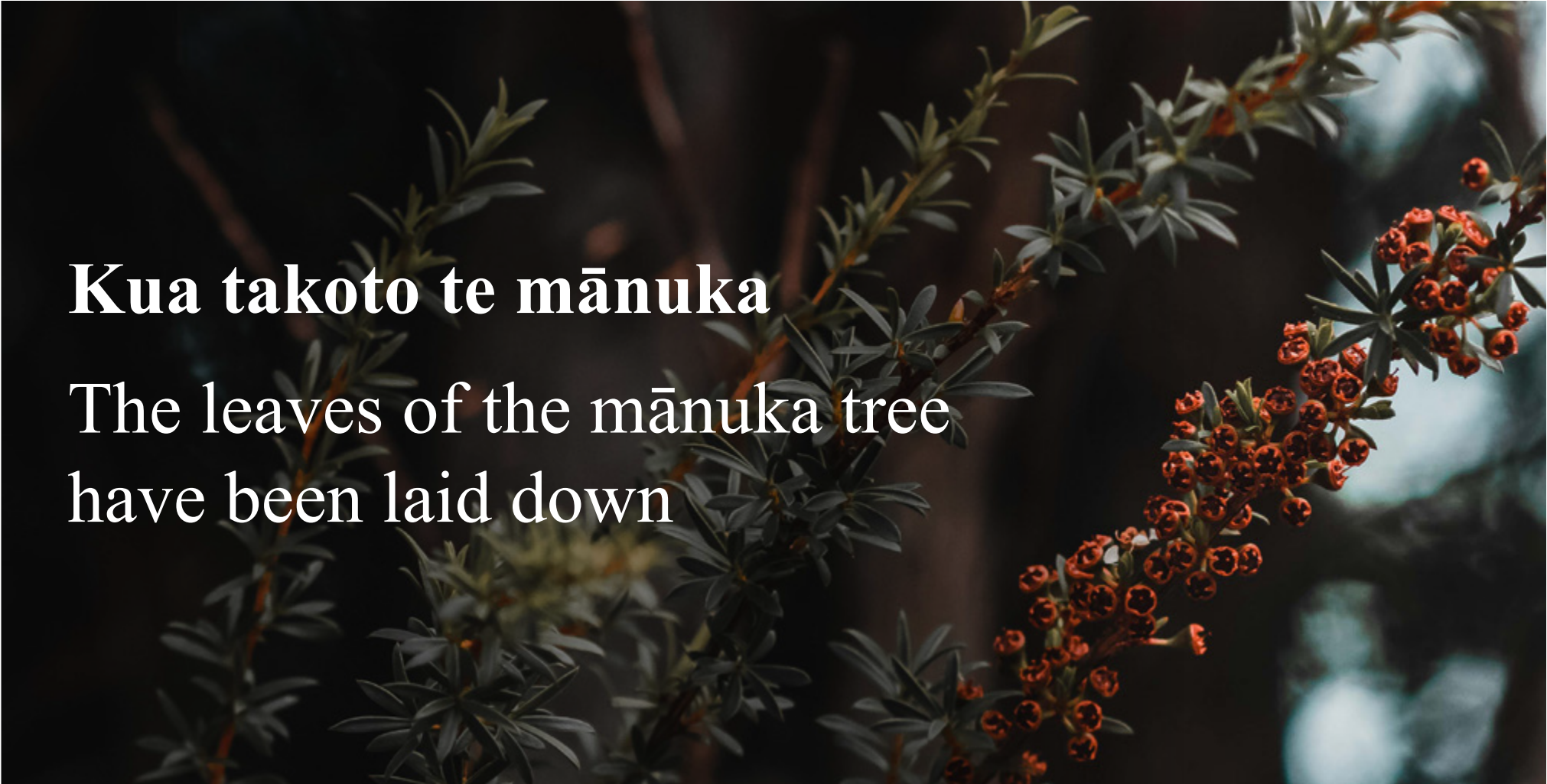


Screen Auckland

Screen Sector Emissions Study – The Challenge



Kua takoto te mānuka
The leaves of the mānuka tree
have been laid down

The screen sector's challenge

Kua takoto te mānuka

The leaves of the mānuka tree have been laid down

The impact of human-caused climate change is the greatest challenge of our time. It will take a collective effort to accept this challenge and take purposeful action in response. The Aotearoa New Zealand screen sector through its media and actions has a key role to engage humanity with the climate crisis, lead dialogue and inspire action.

Kua takoto te mānuka is a traditional Māori metaphor and/or proverbial saying whereby a mānuka (tea tree) embodies a challenge. In a symbolic gesture, those on home ground lay the mānuka leaves down in front of a visiting group, the group must then decide if they will uplift it. In contemporary times, this saying refers to uplifting a challenge.

For the Aotearoa New Zealand screen sector, the challenge to accept is a herenga (commitment) to transition to a net zero carbon and regenerative sector that honours Te Tiriti o Waitangi and the unique connection that Māori have to their taonga (resources), wāhi tapu (cultural sites of significance), and te taiao (natural environment). The screen sector can help heal the imbalance, reconnect, restore, and regenerate our te taiao (natural environment). It is a challenge that must be triggered in all people to influence systemic change pertaining to reducing carbon emissions to net zero.

The Aotearoa New Zealand Government has committed to a net zero economy by 2050. The government is setting a pathway and carbon emissions budgets for a just transition towards a net zero economy. Acceptance of the most urgent challenge of our time will require strong leadership to connect deeply and meaningfully with people, place, and business and drive the necessary changes. The only timeframe that matters is now.

Cover image

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Inside cover image

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Whakarāpopotanga Summary



Aotearoa New Zealand Screen Sector Carbon Footprint

Scope 1

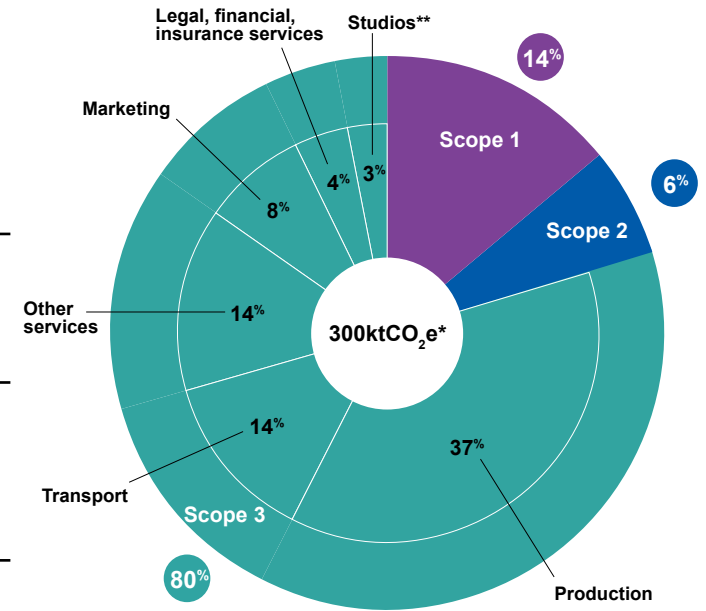
GHG emissions directly from operations that are owned or controlled by the reporting company or organisation, for example, fuels and natural gases.

Scope 2

Indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by a reporting company or organisation.

Scope 3

All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company or organisation, including both upstream and downstream emissions. For example, travel, waste and catering.

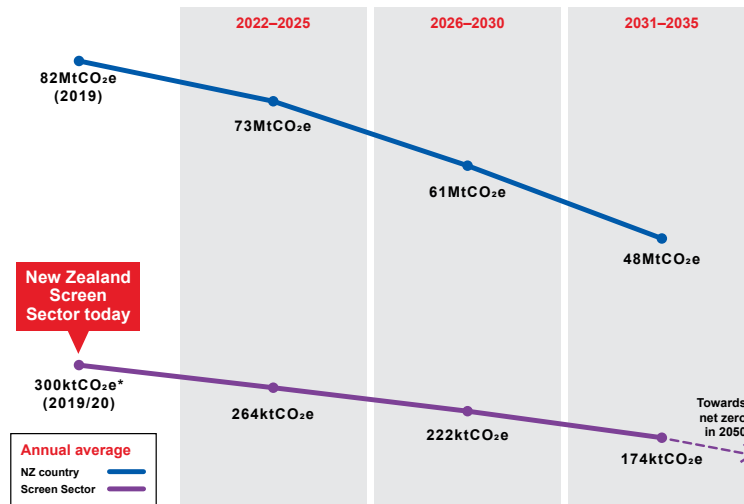


*kilotonnes of carbon dioxide equivalent, as of 2019/20 financial year
 **Due to variation in operations between different types of production, and modeling constraints, emissions related to "Studio" Operations (vs Studio Construction) for example, may be accounted for within the "Production" category. Further data capture and granular analysis is a key recommendation of this report.

Aotearoa New Zealand's First Emissions Reduction Plan

The Aotearoa New Zealand First Emissions Reduction Plan outlines a series of national emissions budgets to which the screen sector can align.

*300 kilotonnes (kt) = 0.3 megatonnes (Mt)



Recommendations

- 1 Accept the challenge that has been laid down to take purposeful action on climate change
- 2 Identify partners to invest in the Aotearoa New Zealand screen sector's infrastructure
- 3 Develop a systemic approach to data collection, modelling, and monitoring
- 4 Reinstate the Stats NZ Screen Industry Survey
- 5 Integrate actions with *Aotearoa New Zealand Screen Sector Strategy 2030*
- 6 Develop a detailed carbon reduction roadmap and action plan

Ngā Rārangi Take

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Kupu Arataki

Introduction

Mihi

Tuia ki te rangi

Tuia ki te whenua

Tuia ki te moana

Tuia te here tangata

Ka rongō te pō

Ka rongō te ao

Tihei mauri ora!

Bind the celestial realm

To the earthly realm

To the great ocean

To bind the tapestry of humanity

To be heard and felt in the night

and in the day

Let there be life!

This report outlines the vision and principles for the screen sector's decarbonisation ambition, alignment with broader national climate change goals and key insights from industry stakeholder engagement.



Te Horopaki

Context

Manaaki whenua,

Manaaki tangata,

Haere whakamua,

Care for the land,

Care for the people,

Go forward together.

The impact of human activities is being felt globally as the effects of anthropocentric climate change increasingly disrupt our everyday lives.

Delegates at the UN Climate Change Conference 2021 (COP26) in Glasgow re-affirmed the Paris Agreement goal to limit the increase in global average temperatures to well below 2°C above pre-industrial levels and pursue efforts to limit it to 1.5°C.

The Glasgow Climate Pact adopted by the delegates expressed “alarm and utmost concern that human activities have caused around 1.1°C of warming to date, that impacts are already being felt in every region, and that carbon budgets consistent with achieving the Paris Agreement temperature goal are now small and being rapidly depleted.”

The New Zealand Government has committed to halve the nation’s 2021 climate pollution by 2030 on a path towards a net zero economy by 2050. In a statement at COP26 the Government highlighted that

“Nature-based solutions and the rights and the role of Indigenous Peoples are critical in the fight against the climate crisis.”

Globally the screen sector is progressively making commitments and setting carbon emissions reductions targets. NBC Universal has committed to carbon neutrality across their entire global operations by 2035. Pinewood Studios is working with partners to increase sustainability, environmental awareness, and reduce waste in tandem with improving their own environmental performance. Netflix will achieve net zero greenhouse gas emissions by the end of 2022 and is investing in the regeneration of critical natural eco-systems. Measuring impact, planning, and tracking progress are central to delivering carbon emissions reductions and broader environmental commitments.

To decarbonise, we need to transition from the current linear economy toward a circular economy, an economy designed to conserve resources, eliminate waste and pollution, circulate products and materials, and regenerate nature. Circular economy principles are increasingly embedded within nations’ climate pledges across the globe.

The government has developed **Te Hau mārohi ki anamata Towards a productive, sustainable and inclusive economy Aotearoa New Zealand’s First Emissions Reduction Plan (ERP)**. Aotearoa New Zealand’s He Pou a Rangi Climate Change Commission highlights the plan will have an impact on all aspects of the economy and society, and the path to a low emission, climate resilient future must be ‘fair and equitable’ to ensure no person is left behind.

For First Nations Peoples, circular economy principles have been a way of life for millennia. The United Nations highlights Indigenous economies are “centred around holistic approaches, where one process or action feeds into another, fostering resilience, reciprocity and respect between people and nature.” Aotearoa New Zealand’s **He Pou a Rangi Climate Change Commission** recognises that being a “good treaty partner goes beyond engagement, and involves us working to understand Māori expectations, recognise Māori rights and interests, enable active partnership and create opportunities for participation.” Recognising and respecting te ao Māori values as Kaitiakitanga, guardians for the sky, sea and the land are coming into focus as key to building climate resilience and transitioning towards a sustainable low carbon future.

Te Horopaki

Context

Ihirangi, the operational arm of Te Pou Take Āhuarangi (Climate Lead) for the National Iwi Chairs Forum, developed the Rauora Indigenous Worldview Framework for the National Climate Change Adaptation Plan. The Rauora framework “depicts a worldview indigenous to Aotearoa; it centralises interconnection, collectivity, holistic wellbeing and intergenerational equity within a changing environmental dynamic. That changeable future is understood by first positioning the human existence within a sacredly interconnected world; within the mana of the ancient world, within the mana of the land, within the mana of the environment and within the mana of the whakapapa collective”¹.

It is now indisputable that climate change is a direct result of human activities. We must work collectively to inspire, define and deliver equitable solutions, embrace circular economy principles and transition towards a regenerative future state.

This report outlines the first steps for the screen sector to work together on it's pathway toward a net zero future.

¹ [National Iwi Chairs Forum, developed the Rauora Indigenous Worldview Framework for the National Climate Change Adaptation Plan](#)



Rose Matafeo and the Baby Done crew on location at Birdwood School, Baby Done
© Piki Films

Tirohanga

Vision

The screen sector accepts the challenge to meet our responsibilities to Aotearoa New Zealand's regeneration as a low carbon, sustainable and inclusive nation, honouring a te ao Māori worldview.

Mā te rongō, ka mōhio

Mā te mōhio, ka mārama

Mā te mārama, ka mātau

Mā te mātau, ka ora.

Through discussion comes awareness

Through awareness comes understanding

Through understanding comes knowledge

Through knowledge comes wellbeing.

South Pacific Pictures © 2019

Screen Auckland: Kua takoto te mānuka

Ngā Mātāpono

Principles

Whāia te iti kahurangi ki te tūohu koe,
me he maunga teitei.

Strive for excellence and if you should
stumble let it be to a lofty mountain.

Commit

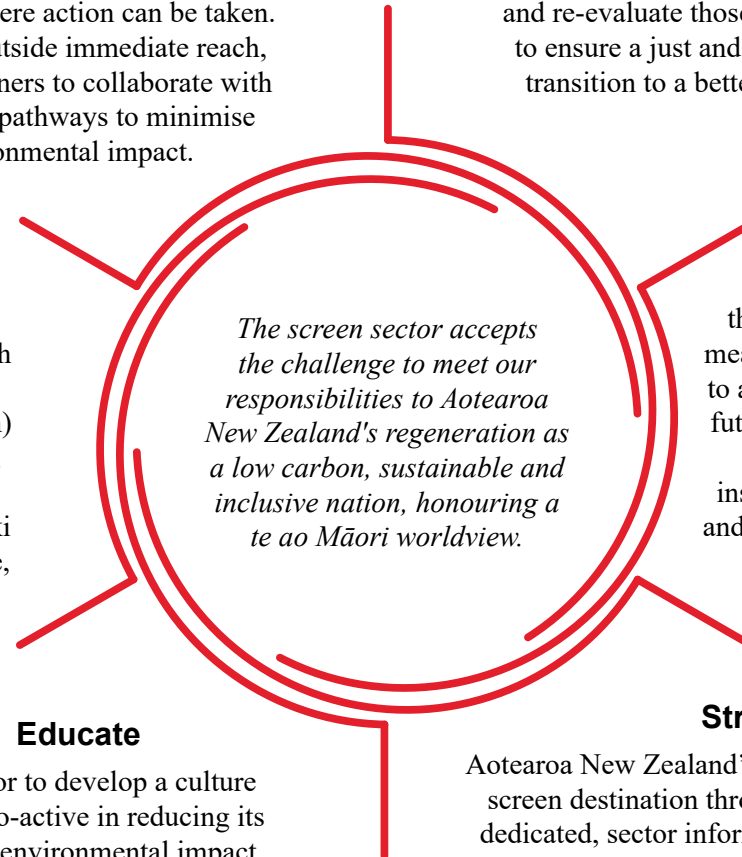
to move quickly and drive action.
Record and share our data to measure and monitor our progress. Recognise there are high environmental impact areas within the sector's sphere of influence where action can be taken. For areas outside immediate reach, identify partners to collaborate with and define pathways to minimise environmental impact.

Re-define

a sector-wide pathway to navigate Aotearoa screen sector towards collective net zero carbon emissions by 2050. Cherish approaches that work, and re-evaluate those that don't to ensure a just and equitable transition to a better future.

Ingrain

our Te Tiriti o Waitangi – Treaty of Waitangi obligations in our approach and ensure protection and participation of Māori through the formation of meaningful partnerships. Respect the Te Taiao (natural environment) as a taonga tuku iho (treasure handed down) to Māori by their ancestors. Recognise that Māori regard the sky, land, soil, plants, trees and water as taonga (treasures) and are spiritually connected to nature. Acknowledge Māori as the kaitiaki (guardians) of these taonga, which provide a source of sustenance, connection and identity for tangata whenua (people of the land).



Empower

the sector with skills and expertise to meaningfully contribute to the transition to a low-emissions and climate-resilient future. Maximise our influence through storytelling to gather, connect and inspire people to meaningfully engage and take urgent action to combat climate change and its impacts.

Educate

our sector to develop a culture that is pro-active in reducing its negative environmental impact. Develop initiatives for skills development, cross-sector collaboration and knowledge sharing.

Strengthen

Aotearoa New Zealand's reputation as an international screen destination through the implementation of a dedicated, sector informed sustainability framework and carbon reduction targets. Grow the screen sector and invest in skills, training, digital and physical infrastructure to meet the sector's growth, sustainability and regenerative goals.

Aotearoa New Zealand Screen Sector Carbon Footprint

The Aotearoa New Zealand screen sector footprint was calculated using data from Stats NZ² and the Global Trade and Analysis Project (GTAP)³. This is an estimate of the overall screen sector footprint, and its distribution across scope 1, 2, and 3 sources, including the breakdown of scope 3 across broad subcategories. Please note that this is a top down estimate using macro data sets. Improved detail and certainty can be achieved through the collection of sector-level data.

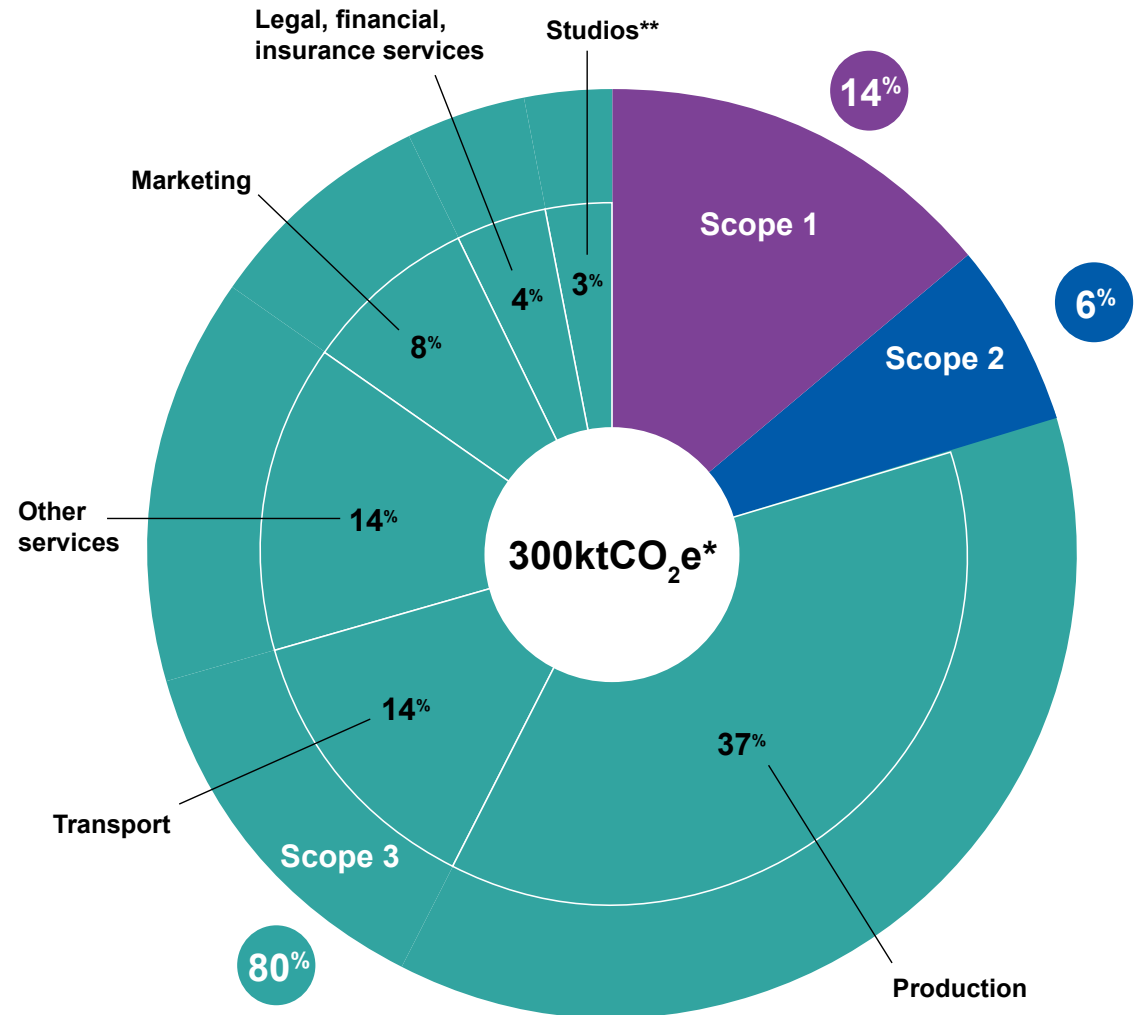
The greenhouse gas emissions (GHG) boundary

The GHG emissions boundary is a standard way of classifying GHG emission sources. The three scopes help the reporting entity draw a boundary around their emissions, making it easier to understand and manage.

	Emissions
Scope 1 GHG emissions directly from operations that are owned or controlled by the reporting company or organisation, for example, fuels and natural gases.	43ktCO₂e
Scope 2 Indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by a reporting company or organisation.	18ktCO₂e
Scope 3 All indirect emissions (not included in scope 2) that occur in the value chain of the reporting company or organisation, including both upstream and downstream emissions. For example, travel, waste and catering.	239ktCO₂e
Total	300ktCO₂e

² Screen Industry Survey

³ Aguiar, Angel, Badri Narayanan, & Robert McDougall. "An Overview of the GTAP 9 Data Base." Journal of Global Economic Analysis 1, no. 1 (June 3,2016): 181-208



*kilotonnes of carbon dioxide equivalent, as of 2019/20 financial year

**Due to variation in operations between different types of production, and modeling constraints, emissions related to "Studio" Operations (vs Studio Construction) for example, may be accounted for within the "Production" category. Further data capture and granular analysis is a key recommendation of this report.

Tīaroaro

Align

He waka eke noa.

A canoe which we are all in with no exception.

Te hau mārohi ki anamata

Towards a productive, sustainable and inclusive economy

Aotearoa New Zealand's First Emissions Reduction Plan

Purpose

To contribute to the global effort to limit global warming to 1.5°C

The strategy is based on five principles

1. Playing our part
2. Empowering Māori
3. Equitable transition
4. Taiao Ora (healthy natural world)
5. A productive, sustainable and inclusive economy

The screen sector has an opportunity to **'play our part'** by measuring its impact and developing a roadmap towards decarbonisation that aligns with Aotearoa New Zealand's First Emissions Reduction Plan. The sector can use its platform to gather, connect and inspire meaningful action on climate change, and advocate to drive not only a response to carbon emissions reduction within the screen sector but as an exemplar for other sectors across the nation and the world.

The sector has an opportunity to **empower** and acknowledge **Māori** as the kaitiaki (guardians) of te taiao (the natural environment) and seek to embed mātauranga Māori (Māori knowledge) and value systems within its decarbonisation roadmap. Investment in skills, training, and infrastructure to ensure an **equitable transition** will be key towards delivering the screen sector's sustainable and regenerative goals, as well as identifying partners within government and the private sector to build the evidence base and tools to monitor impacts.

Aotearoa New Zealand's beautiful and diverse landscape is one of several key elements that has made the country an iconic screen destination. By **respecting nature** the screen sector can move from minimising the impact of shooting on location to developing strategies for site regeneration and a healthy environment. Embedding these strategies within a broader decarbonisation roadmap sets a common understanding and approach to maintain Aotearoa New Zealand as a screen destination for a growing number of producers who hold high environmental sustainability ambition and expectation.

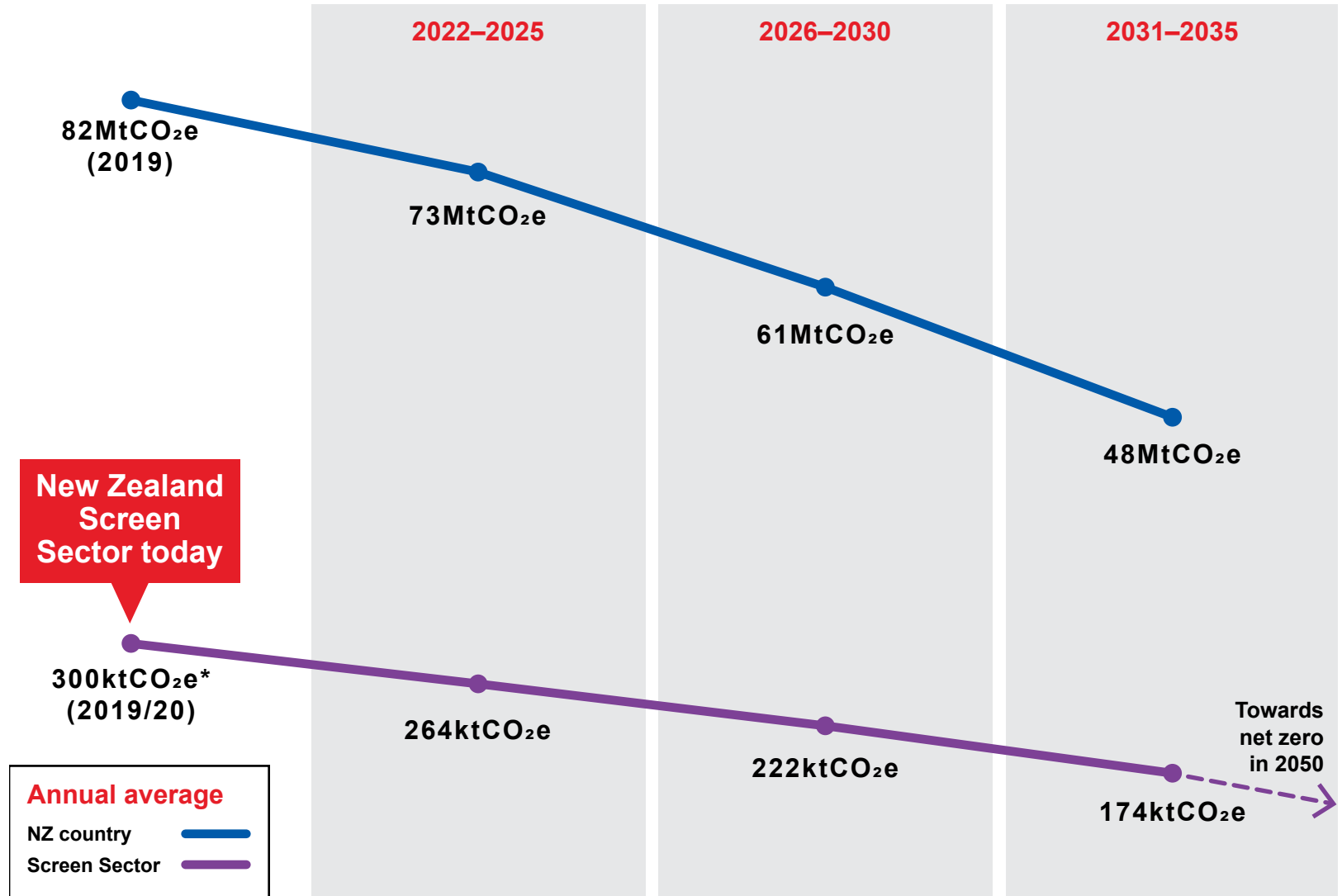
As the Aotearoa Screen Sector 2030 Strategy highlights, the sector has a key role in Aotearoa New Zealand's much-needed economic recovery and future growth. The strategy notes that the sector connects with a wide variety of other sectors such as travel, tourism, hospitality, building and construction, catering and rental services. This intersection with other sectors and capacity to tell Aotearoa New Zealand's stories that can inspire and drive change highlights the sector's vital role in supporting the nation's broader ambition for a **productive, sustainable and inclusive economy**.

Te hau mārohi ki anamata

Aotearoa New Zealand's First Emissions Reduction Plan

The graphic reflects the trajectory for the Aotearoa New Zealand screen sector to align with the national emissions budgets outlined in Aotearoa New Zealand's First Emissions Reduction Plan.

In this plan the Government has set emissions budgets for the next 15 years, placing limits on the emissions that Aotearoa New Zealand can produce. The plan sets out detailed actions to reduce emissions in key sectors of our economy, including transport, energy and industry.



*300 kilotonnes (kt) = 0.3 megatonnes (Mt)

Ngā Tūtohunga

Recommendations

Ka mate kāinga tahi, ka ora kāinga rua.

When one dwelling place declines, a second one will emerge to take its place.

	Responsibility	Timeframe
1 <i>Accept the challenge that has been laid down to take purposeful action on climate change.</i> Proactively communicate the Aotearoa New Zealand screen sector’s role in responding to the challenge focussing on carbon emissions reduction and communicating this within the sector and to the world. The screen sector is uniquely placed to communicate with the world about the challenge we face and how we respond to it.	Funding Bodies Regional Film Offices Guilds	6–12 months
2 <i>Identify partners to invest in the Aotearoa New Zealand screen sector’s infrastructure</i> to eliminate or reduce reliability on fossil fuels, particularly on location. Investment in renewable-powered microgrids and community battery storage may help reduce reliability on fossil fuel powered generators when shooting on location. Similarly, energy efficiency measures can assist studios to reduce their carbon footprint.	Funding Bodies Regional Film Offices Guilds	1–3 years
3 <i>Develop a systemic approach to data collection, modelling, and monitoring</i> across the sector. Quantifying the sector’s annual carbon emissions footprint and monitoring it year-on-year will ensure transparency and accountability for reducing carbon emissions. The data could be collected in line with other reporting processes to maximise efficiencies.	Government & Funding Bodies Regional Film Offices Guilds	6–12 months
4 <i>Reinstate the Stats NZ Screen Industry Survey.</i> This national survey will also assist with the systemic data collection and ensure benchmarking consistency across multiple years.	Government & Funding Bodies	6–12 months
5 <i>Integrate actions with Aotearoa New Zealand Screen Sector Strategy 2030</i> (the strategy). The strategy identifies a key goal to refresh Aotearoa New Zealand’s screen sector environmental sustainability program and create a social sustainability and wellbeing framework. Integration with the strategy can ensure broader alignment and identify knowledge gaps.	Sector-wide	6–12 months
6 <i>Develop a detailed carbon reduction roadmap and an action plan</i> to identify opportunities to reduce the carbon emissions of the sector in line with the Aotearoa New Zealand's First Emissions Reduction Plan and towards net zero by 2050. A roadmap will demonstrate how the sector’s carbon emissions reductions can be achieved whilst the sector continues to prosper.	Funding Bodies Regional Film Offices Guilds	6–12 months

Data analysis



Data introduction

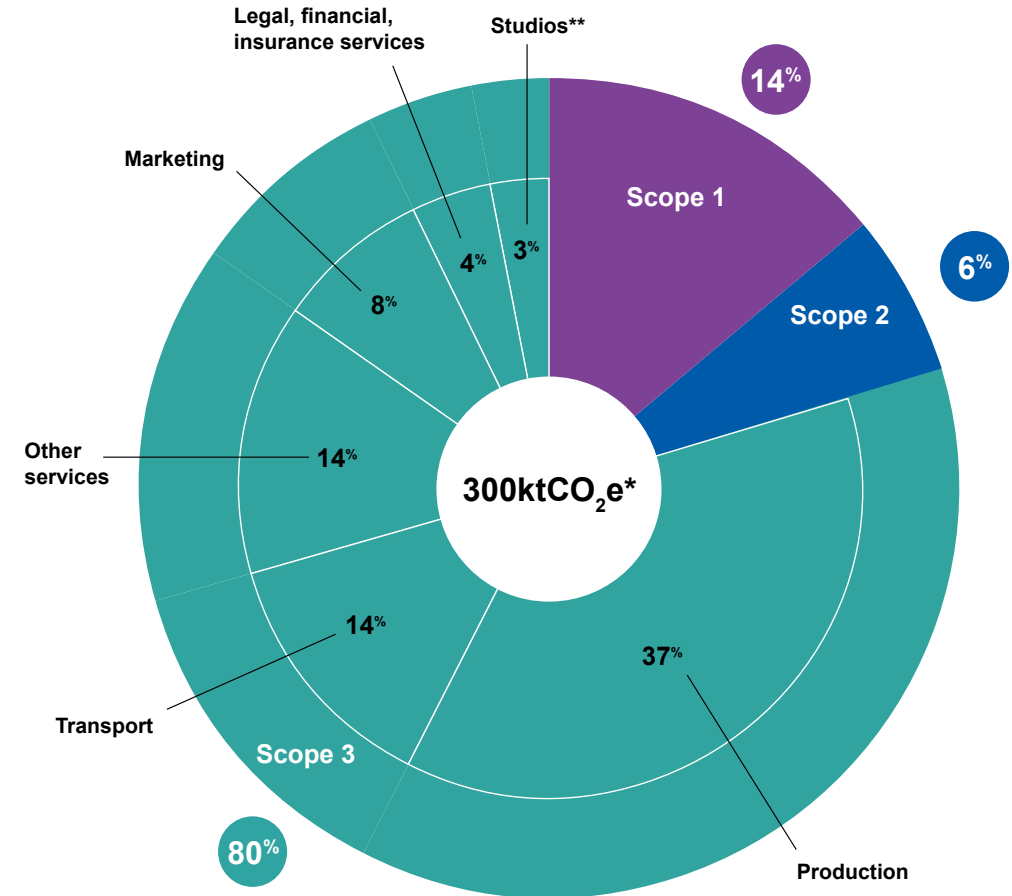
Whole sector

The whole sector footprint was calculated using data from Stats NZ and the Global Trade and Analysis Project (GTAP)⁴. Stats NZ provides data on businesses in Aotearoa New Zealand. The data details revenue for organisations in the screen sector defined using the approach previously used in the published Screen Surveys from Stats NZ⁵.

The data captured the overall scale of activities for the sector. From this total, an estimate of the expenditure distribution overheads and supply-chain elements was calculated using the expenditure profiles for the sector provided in the latest Supply and Use Table (SUT) for New Zealand published by Stats NZ⁶. This SUT is a model of the wider economy, covering typical expenditure distributions and connections between industries. This model was used to estimate the supply chain expenditure profile for the sector in the absence of more detailed data.

Once an estimate of the sector’s spending across economic sectors was produced, emissions factors from the GTAP database were used to estimate the emissions associated with this spending, and produce the wider emissions profile presented in this report. This profile presents an estimate of the overall sector footprint, and its distribution across scope 1, 2, and 3 sources, including the breakdown of scope 3 across broad subcategories. The results are based on published data and models and represents the best available indication of emissions hotspots across the sector to date.

However, there are significant uncertainties involved in estimating the expenditure profile based on the Stats NZ model and this breakdown is hard to validate due to a lack of reported sector level data. Through bottom-up reporting, and collection of expenditure data from the sector, a more detailed and accurate breakdown of emissions may be sought.



⁴ Aguiar, Angel, Badri Narayanan, & Robert McDougall. "An Overview of the GTAP 9 Data Base." Journal of Global Economic Analysis 1, no. 1 (June 3,2016): 181-208

⁵ Screen Industry Survey

⁶ National accounts input-output tables: Year ended March 2020

*kilotonnes of carbon dioxide equivalent, as of 2019/20 financial year

**Due to variation in operations between different types of production, and modeling constraints, emissions related to "Studio" Operations (vs Studio Construction) for example, may be accounted for within the "Production" category. Further data capture and granular analysis is a key recommendation of this report.

Data introduction

Profiles

Profiles for four types of TV production have been produced, using anonymised cost plans provided through our collaboration with NZ On Air and other screen sector producers. These profiles include TV news, a drama series, a sports documentary, and an animated series aimed at children. Detailed expenditure from the cost plans were used in combination with emissions factors derived from the GTAP model to produce a breakdown of emissions from the supply chains of each of these productions (scope 2 and scope 3 sources). The coming pages provide detail on the breakdown of these emissions across areas of each type of production. These profiles are based on real-world examples and may not be fully representative of all productions of this type.

Definitions

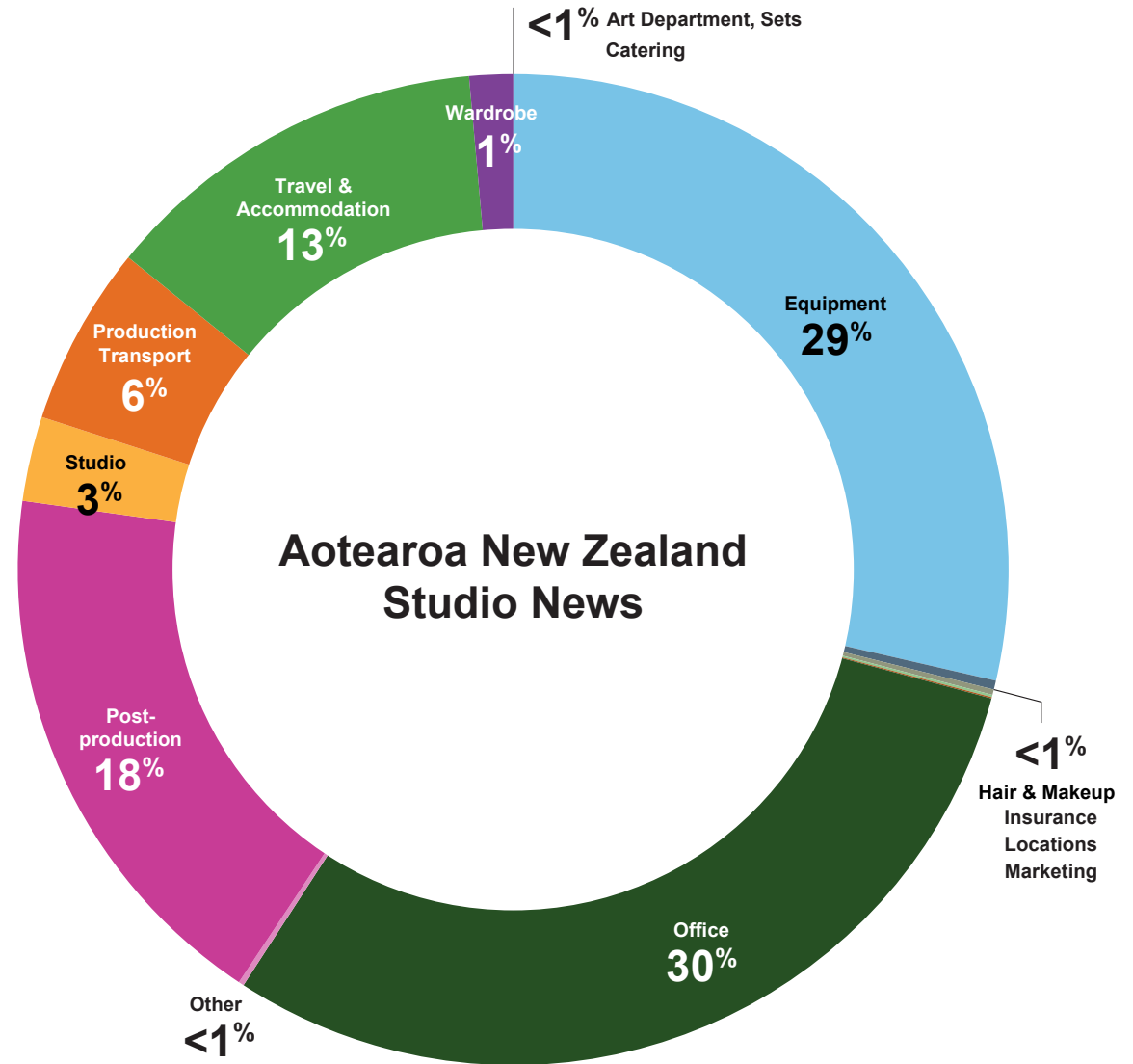
Art Department	Design and construction of scenery and props
Catering	Provision of food and beverage for cast and crew
Equipment	Hire and purchase of camera, lighting, audio equipment and plant
Hair & Makeup	Purchase of hair and makeup materials
Insurance	Purchase of production-related insurance
Locations	Purchase of permits, materials and equipment for on location filming
Marketing	Production-related marketing and merchandising services
Office	Rental and servicing of office facilities that support production
Other	Other services and expenses related to production not elsewhere classified
Post-production	Equipment and services related to post-production and editing
Studio	Hire of studio facilities and associated expenses
Production Transport	Logistics related to production vehicles
Travel & Accommodation	Travel and accommodation of producers, cast and crew
Wardrobe	Purchase and hire of wardrobe materials

Profiles

The profile details the emissions associated with the production of a long-running studio news programme. This production sees high emissions associated with the purchase/hire of equipment, transport, travel and accommodation in the production of stories. In addition, there are high emissions from the operation of the offices, which may be due to the facilities used by journalists and researchers. Post-production and editing also plays a significant role in the footprint. As this is a long-running series with little demand for set building and props, the budget does not cover studio construction and similar activities.

Aotearoa New Zealand Studio News Production Emissions

Art Department	<1%
Catering	0%
Equipment	29%
Hair & Makeup	<1%
Insurance	<1%
Locations	<1%
Marketing	<1%
Office	30%
Other	<1%
Post-production	18%
Studio	3%
Production Transport	6%
Travel & Accommodation	13%
Wardrobe	1%

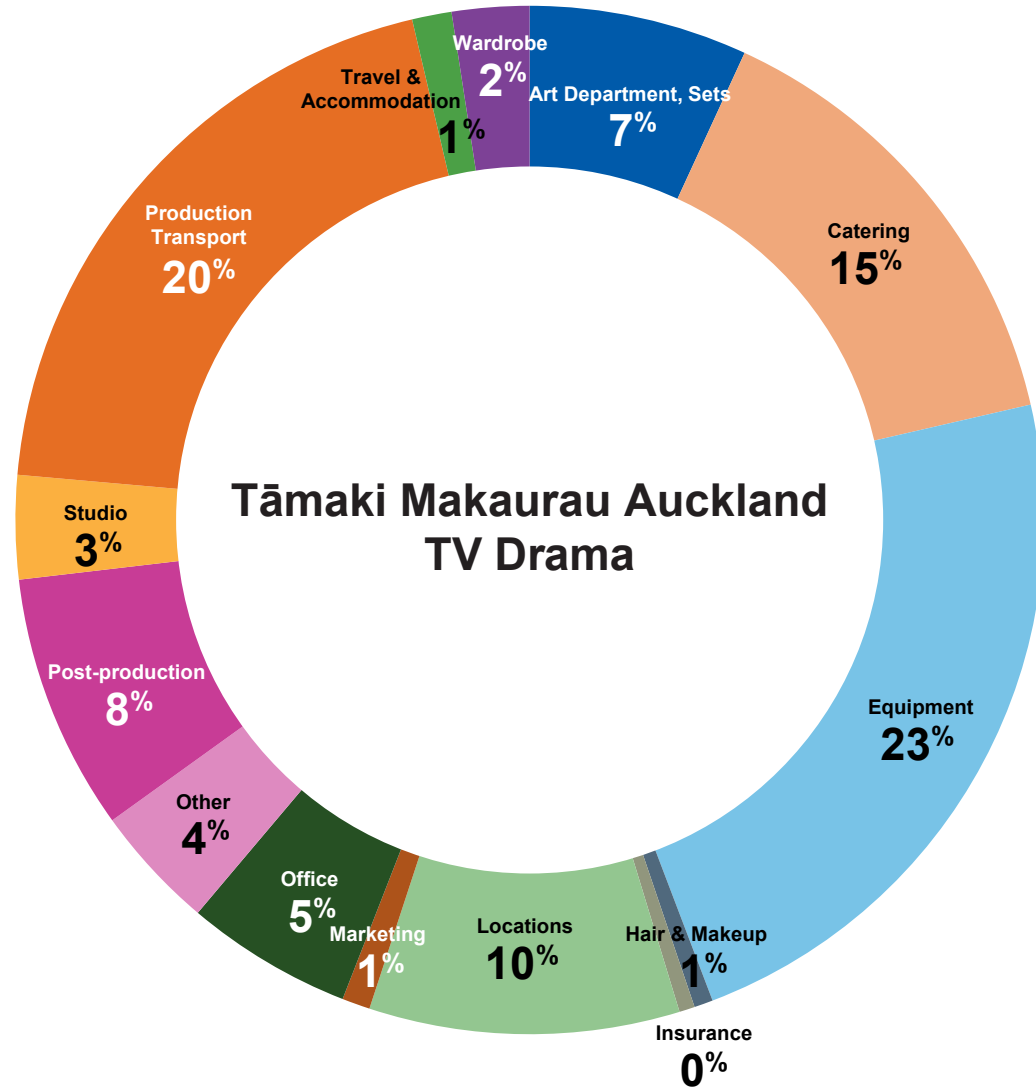


Profiles

This production is a drama series filmed in the Tāmaki Makaurau Auckland area, across multiple locations and studios, with a large cast of talent. Services provided for this larger number of production staff result in a major component of emissions, with transport and catering services covering 35 per cent of the total. In addition, there are contributions relating to the various locations and activities of the art department and wardrobe teams. Equipment purchase and hire is the largest single source of emissions.

Tāmaki Makaurau Auckland TV Drama Production Emissions

Art Department	7%
Catering	15%
Equipment	23%
Hair & Makeup	1%
Insurance	0%
Locations	10%
Marketing	1%
Office	5%
Other	4%
Post-production	8%
Studio	3%
Production Transport	20%
Travel & Accommodation	1%
Wardrobe	2%

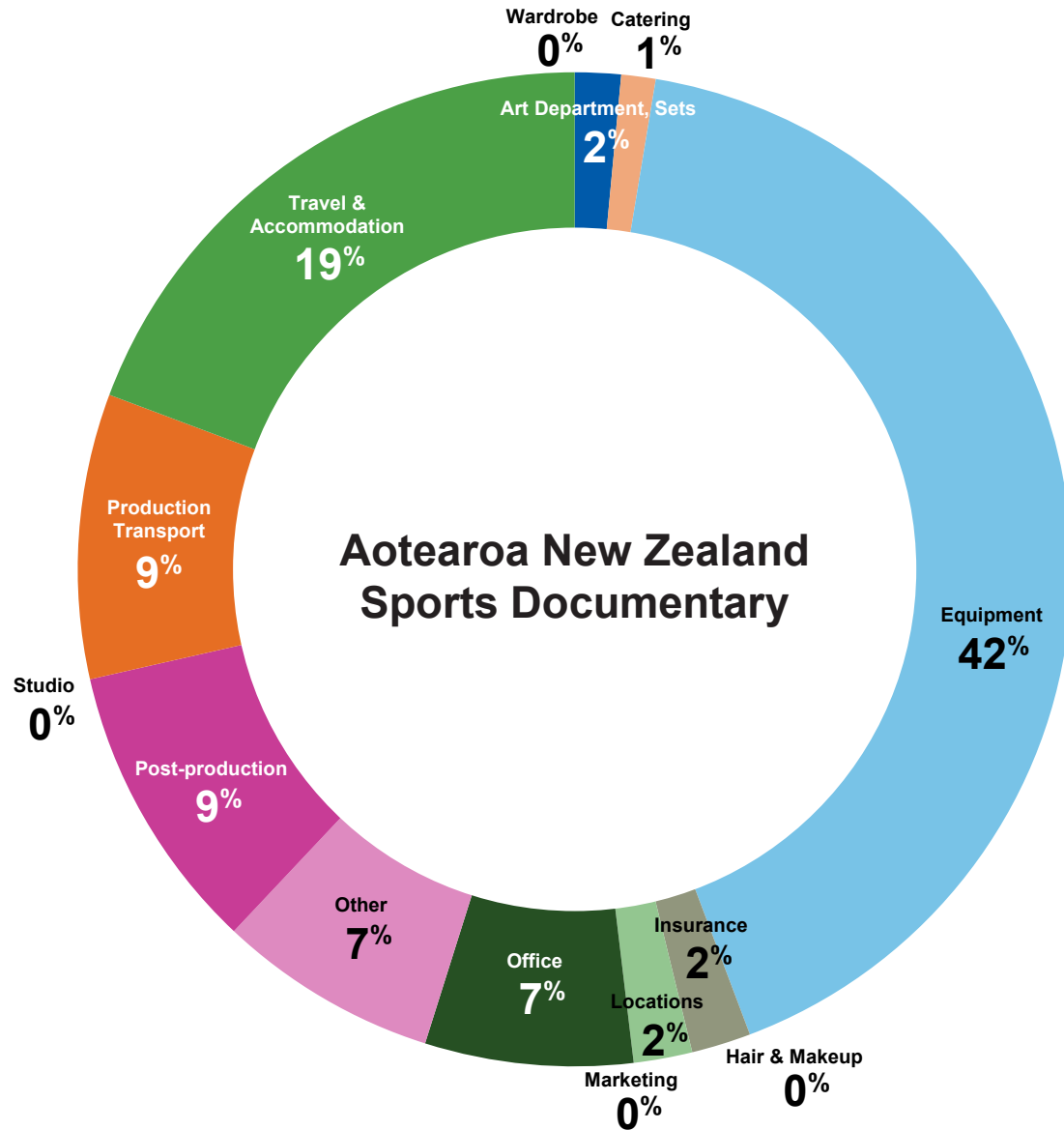


Profiles

This production of a sports documentary focuses on travelling to interview sportspeople and fans. This production has a low budget and footprint dominated by equipment hire, and transport and accommodation services. Office and post production activities also play a role in the overall emissions profile.

Aotearoa New Zealand Sports Documentary Production Emissions

Art Department	2%
Catering	1%
Equipment	42%
Hair & Makeup	0%
Insurance	2%
Locations	2%
Marketing	0%
Office	7%
Other	7%
Post-production	9%
Studio	0%
Production Transport	9%
Travel & Accommodation	19%
Wardrobe	0%

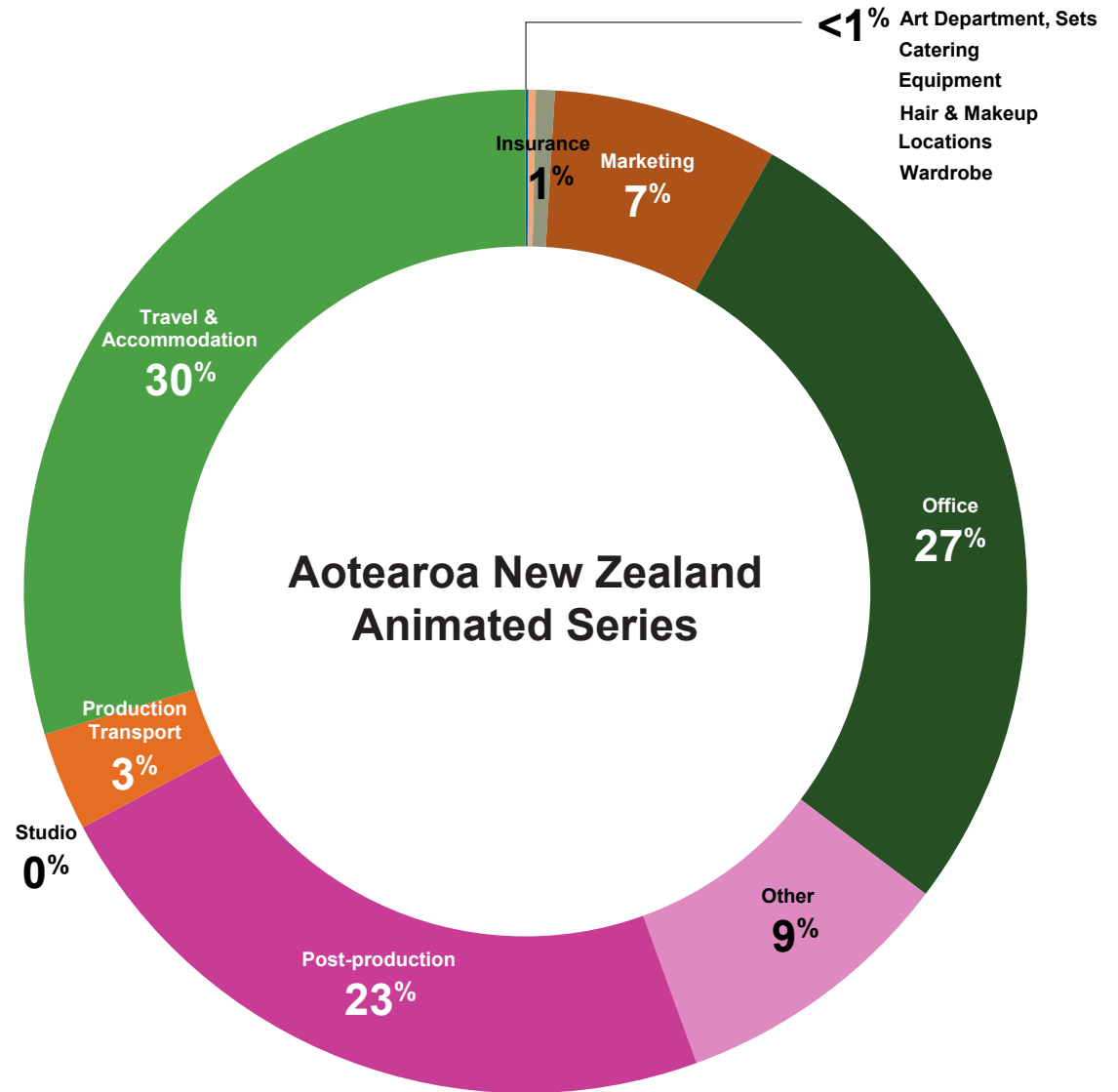


Profiles

This animation series does not include any on location filming. Animation and editing activities occur in offices and post-production services dominate emissions. Travel and accommodation also play a major part in the emissions. The cost plan did not provide context to why the budget and emissions for these activities were so high, but it could be related to transporting talent for recording audio / voiceover for characters. Marketing relates to the merchandising associated with the animation characters.

Aotearoa New Zealand Animated Series Production Emissions

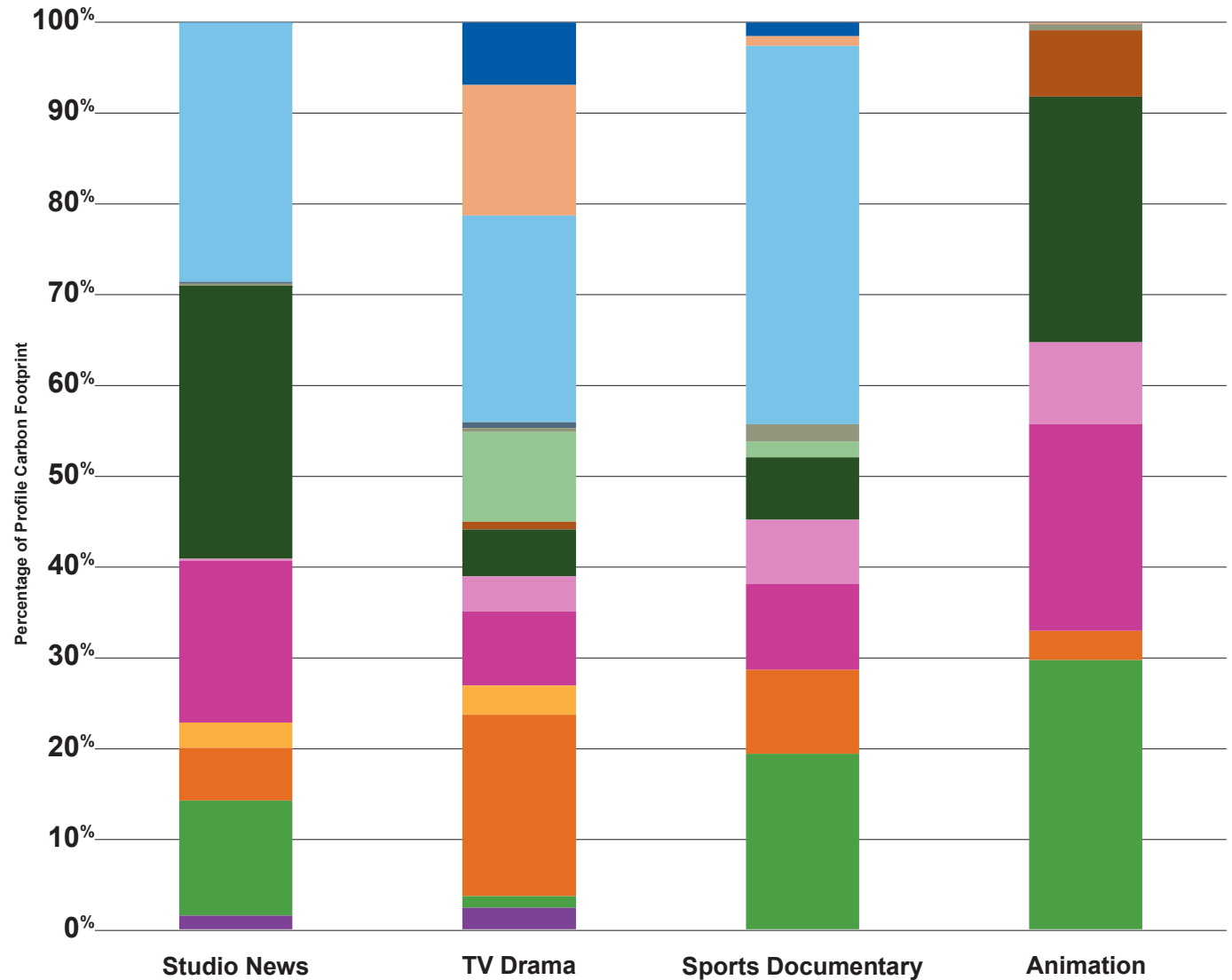
Art Department	<1%
Catering	<1%
Equipment	0%
Hair & Makeup	0%
Insurance	1%
Locations	<1%
Marketing	7%
Office	27%
Other	9%
Post-production	23%
Studio	0%
Production Transport	3%
Travel & Accommodation	30%
Wardrobe	0%



Comparison

The profiles illustrate the variety in the distribution of emissions associated with differing types of productions. This analysis highlights that the type of production, genre, budget, and geography have a bearing on the emissions hotspots. Within the context of the screen sector's ambition to reduce their carbon impact, individual productions should identify areas to focus their decarbonisation action.

- Art Department
- Catering
- Equipment
- Hair & Makeup
- Insurance
- Locations
- Marketing
- Office
- Other
- Post-production
- Studio
- Production Transport
- Travel & Accommodation
- Wardrobe



Āpitihanga

Appendix

Ko te pae tawhiti whāia kia tata, ko te pae
tata whakamaua kia tīna.

Pursue the distant horizon, while cherishing
the achievements you attain along the way.

Te Haerenga

The journey

Itiiti rearea, teitei kahikatea ka taea.

Although the area is small it can ascend the lofty heights of the Kahikatea tree.

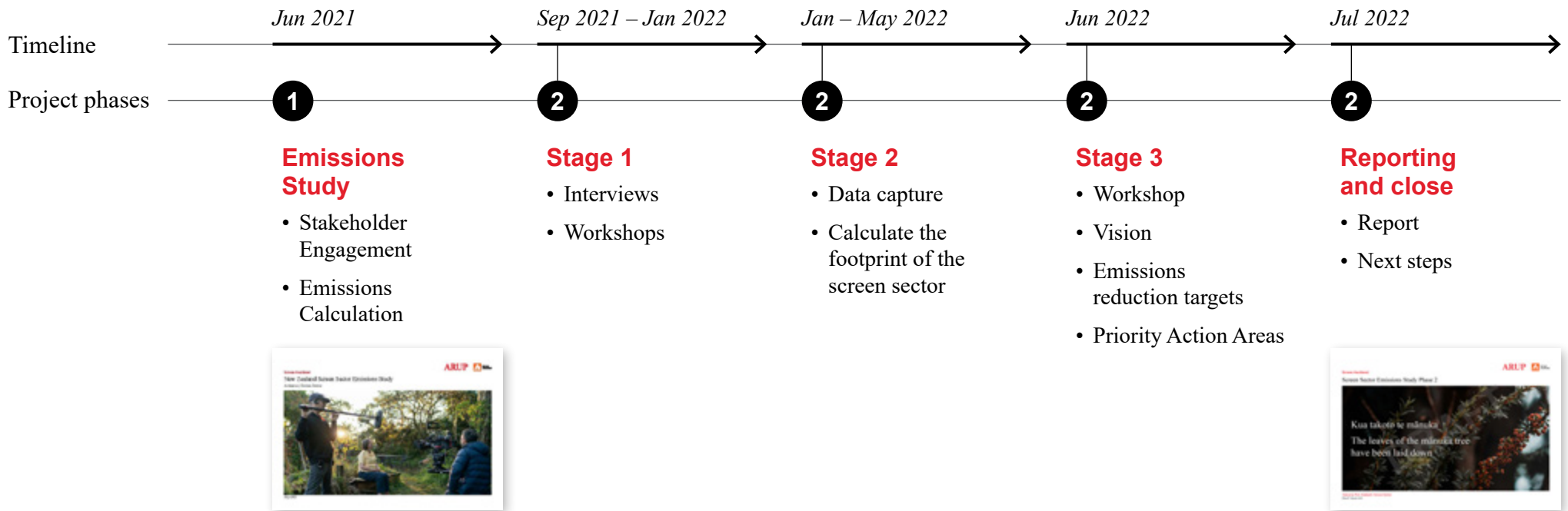


Te Tukanga

The process

Mō tātou, ā, mō kā uri, ā muri ake nei.

For us and our children after us.



Te Pēwheatanga

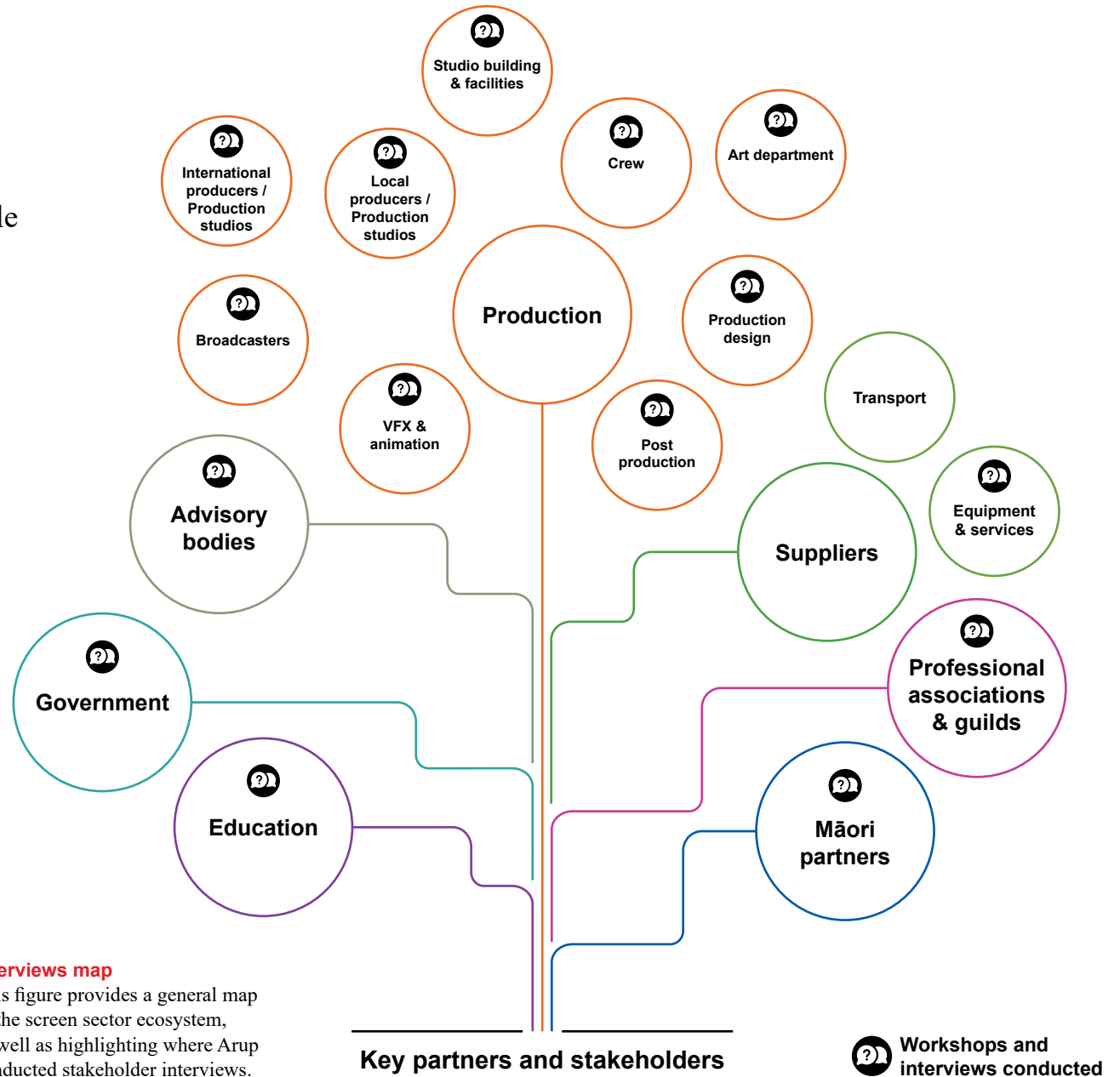
The approach

Ko koe ki tēnā, ko ahau ki tēnei kīwai o te kete.

You carry that handle, and I will carry this handle and together we will carry this woven basket.

In late 2021 through early 2022, Arup conducted fifteen interviews and three workshops with key partners and stakeholders from across the screen sector including government agencies, professional associations and guilds, studios, production companies, producers, and production managers.

Interviews were loosely structured to explore interactions and relationships in the sector. This facilitated better understanding of high carbon impact areas, availability of data to measure carbon impact, and opportunities and challenges to improving sustainable screen production.



Interviews map
This figure provides a general map of the screen sector ecosystem, as well as highlighting where Arup conducted stakeholder interviews.

Te Pēwheatanga

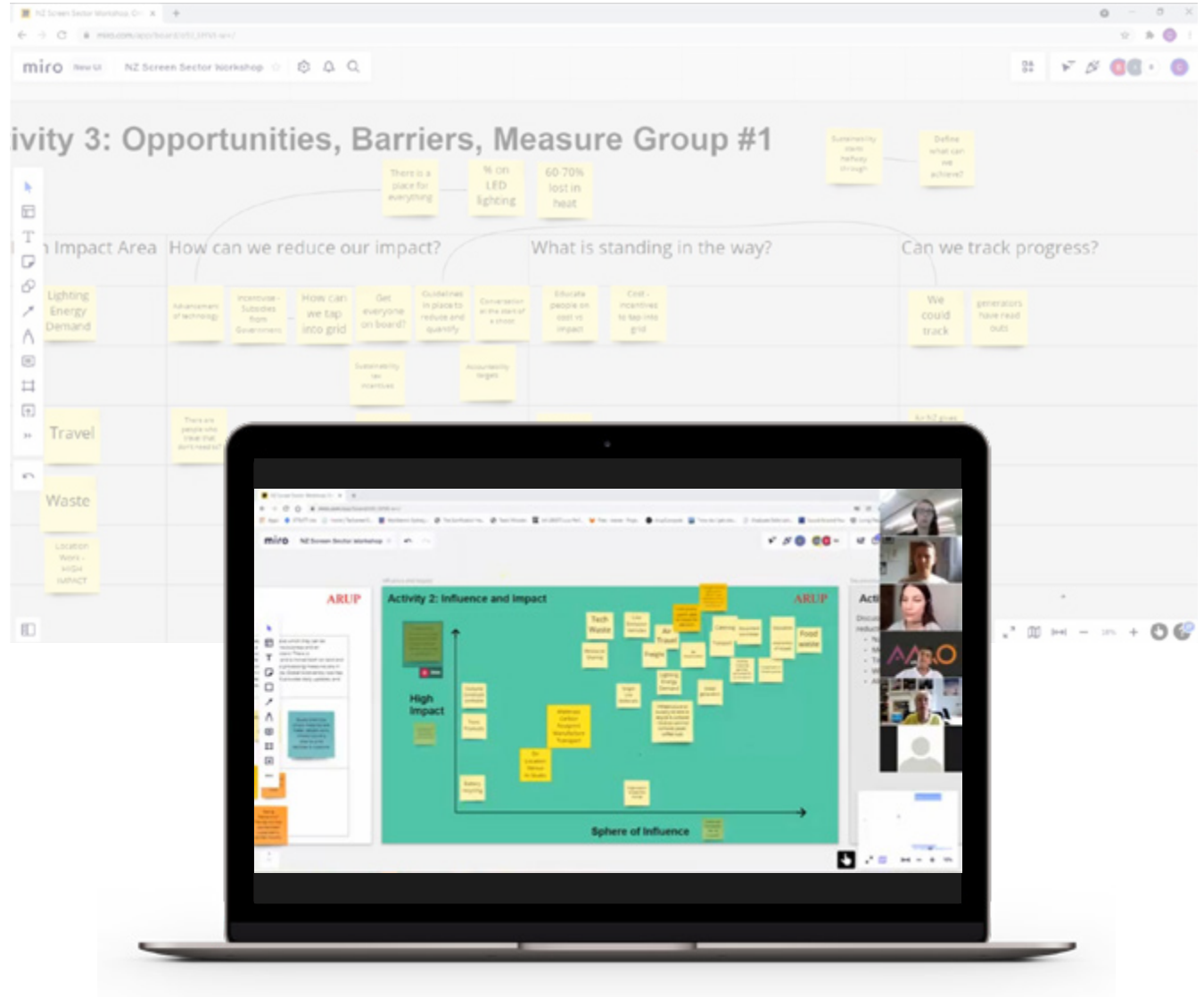
The approach

Two online interactive workshops were held to:

- Explore the challenges and opportunities in implementing sustainable practices
- Define the sector’s high impact areas
- Identify the availability and capacity to gather data to measure carbon impact
- Define principles to underpin a vision
- Define the sector-wide commitment to shared emissions targets and goals.

For the purposes of this study the screen sector has been defined as the following that is produced in Aotearoa New Zealand:

Film	TV
Feature films	Large Scale (High End TV – UK definition)
Short films	Longform Drama
	Documentary/Reality
	Advertisement
	News and Broadcast
	Animation
	Gaming



Ko ngā kaikōrero

Who we spoke to

Whiria te tāngata.

Weave the people together.

Alex McShane
Firefly Films

Alice Shearman
NZWG, Film Auckland Inc

Amanda Pearson
Tātaki Auckland Unlimited

Amber Wakefield
Film Auckland Inc, NZCS

Ange Hume
GripHQ

Antony Deaker
Dunedin City Council,
Film Dunedin, Film Otago
Southland

Ben Quinn
Te Reo Tātaki TVNZ

Bex Kelly
Finch Company

Brendon Durey
Filmfx Co Ltd

Cameron Young
Auckland Council

Catherine Bates
New Zealand Film
Commission

Claire Thompson
Finch Company

Craig Gainsborough
Gainsborough Films, Greenlit

Dale Corlett
New Zealand Film
Commission

Dave Watson
Greenshoot Pacific,
Sustainable Business Network

Desray Armstrong
Sandy Lane Productions

Felicity Letcher
Main Reactor, AMO Studios

Glenn Usmar
NZ On Air

Hana Botha
Sustainability Coordinator

Iris Weber
Batch Film Ltd

James Brookes
Department of Post,
Film Auckland Inc

James Nicholson
AUT School of
Communication Studies

Jasmine Millet
Tātaki Auckland Unlimited

Jon Kirk
Yoobee Colleges

Jude Callen
Te Reo Tātaki TVNZ

Juliet Williams
Screen Auckland

Kahli Scott
Film Queenstown Lakes,
Film Otago Southland

Karen Te O Kahurangi Waaka
New Zealand Film
Commission

Kathryn Graham
New Zealand Film
Commission

Kay Howe
Studio West

Kelly Martin
South Pacific Pictures

Kimberly Burnick
NBC Universal

Kylie Croft
Greenstone

Leanne Ross
NZ Gaming Directors
Association

Lisa Endersby
Tātaki Auckland Unlimited

Malcolm Lawry
Tātaki Auckland Unlimited

Margaret Slater
Slater Films,
Film Auckland Inc

Marty Mifsud
Tātaki Auckland Unlimited

Matthew Horrocks
Screen Auckland

Megan Tucker
Production Manager

Melanie Jones
South Pacific Pictures

Melissa McKenzie
Stats New Zealand

Michael Robins
Craft Services

Nia Phipps
New Zealand Film
Commission

Nicci Boucher
Screen Wellington

Nicola MacAllan
Direct Rentals,
Production Coordinator

Nora Aati
Pacific Islands Screen Artists

Patricia Watson
Women in Film and Television

Philippa Mossman
New Zealand Film
Commission

Rachel Antony
Greenstone

Rebecca Reid
Power Rangers
Productions Limited

Richard Fletcher
Libertine Pictures,
SPADA

Rose Archer
Sustainability Manager,
Greenlit

Sally Campbell
South Pacific Pictures

Sam Noon
Tātaki Auckland Unlimited

Sarah Spurway
Power Rangers
Productions Limited

Sean O'Neill
Avalanche Lighting

Tainui Stephens
Producer

Tracey Collins
Production Designer

Victoria Dabbs
Firefly Films &
Share the Knowledge

Vinnie Ashton
Hair and Makeup Designer

Wendy Bremner
NEP Studios

Wirihana Takuira
Te Reo Tātaki TVNZ

Yolande Dewey
New Zealand Advertising
Producers Guild

Ngā mātāpono o te tirohanga

Principles of a vision

Mā te rongō, ka mōhio,

Mā te mōhio, ka mārama,

Mā te mārama, ka mātau,

Mā te mātau, ka ora.

Through discussion comes awareness,

Through awareness comes understanding,

Through understanding comes knowledge,

Through knowledge comes wellbeing.

The outcomes of the first stage of work identified a number of principles that formed the foundation of a collective vision for the Aotearoa New Zealand screen sector.

© Jiàn Feng Gao / EyeEm, Getty Images

Screen Auckland: Kua takoto te mānuka

Te Tiriti o Waitangi

Acknowledge and honour Te Tiriti o Waitangi – The Treaty of Waitangi to ensure protection and participation of Māori through the formation of meaningful partnerships

Te Taiao

The natural environment is a taonga tuku iho (treasures handed down) to Māori by their ancestors. Māori regard the sky, land, soil, plants, trees and water as taonga (treasures) and are spiritually connected to nature. Māori are also the kaitiaki (guardians) of these taonga, which provide a source of sustenance, connection and identity for tangata whenua (people of the land)

Align

with or better national and international carbon goals

Act

as a leader in the transition to a low-emissions and climate-resilient future. Maximise our influence through storytelling

Commit

to sharing our data to measure and monitor our progress

Consciously

move quickly and drive action

Grow

the sector, not the emissions

Connect,

partner, and gather people to reach a collective sustainability goal

Strengthen

Aotearoa New Zealand's reputation as an international screen destination through the implementation of a dedicated, sector-informed sustainability framework

Invest

in skills, training, and infrastructure to meet the sector's sustainable and regenerative goals

Recognise

that there are areas with high environmental impact within the sector's sphere of influence and action can be taken there

Advance

forward and shape our story in a low carbon economy

Define

sector-wide pathway to navigate Aotearoa New Zealand's screen sector to net zero carbon emissions by 2035 and toward a fully regenerative sector in 2050 through an effort that is educational, scalable, and fully incorporates a te ao Māori worldview

What we heard from the screen sector from
a series of interviews and workshops

Kaitiakitanga – acknowledge Iwi guardianship and connection

Nationally consistent approach to reducing impact

“

Build upon strong foundations e.g. Screensafe

”

Further strengthen Aotearoa New Zealand’s reputation

An impressive night beach set was created at a warehouse in Avondale, Auckland
© The Wilds, Amazon Prime Video

What we heard from the screen sector from
a series of interviews and workshops

Demystify, educate and joining the dots are the keys.

We need to be able to measure [carbon emissions] easily, at a glance.

“ Ensure everyone has knowledge. To put everyone
on the right path, the right direction. ”

People want to do it because they believe in [sustainable practice].

The industry wants change, it just doesn't know how.

...if we respond early, we can define
how it affects our industry.

Filming David Bain's Dunedin paper run on the streets of Helensville, Auckland
© Black Hands, Warner Bros

What we heard from the screen sector from
a series of interviews and workshops

Data is critical

The minute we are out the gate, we're on diesel

“

We need to share and re-use resources

”

We need guidance and systems

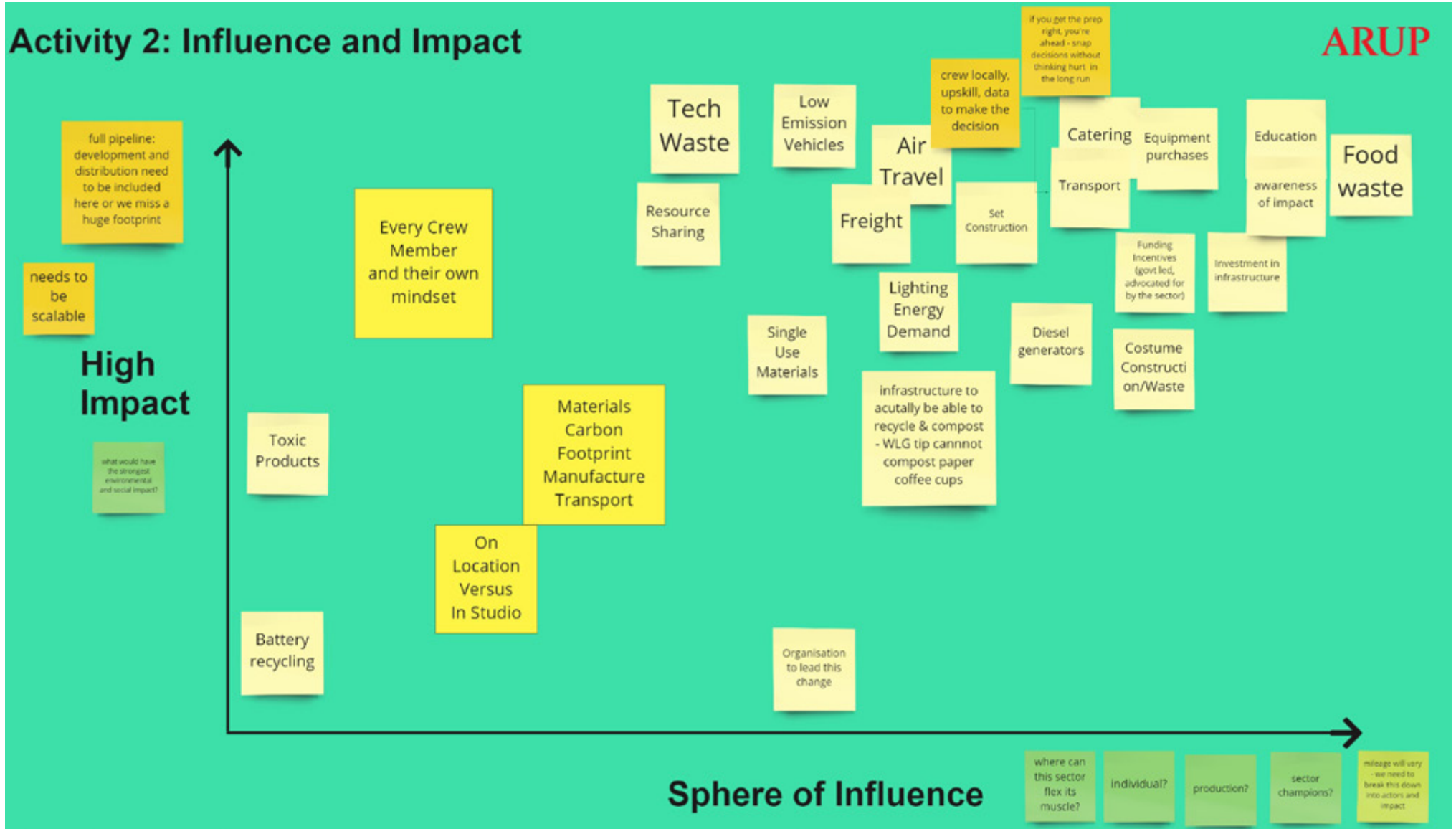
We can track progress but it requires buy in from
productions, suppliers, funding bodies to share details

The Brokenwood Mysteries Season 5 filming on location in west Auckland
© South Pacific Pictures, 2018

Miro board snapshots

Activity 2: Influence and Impact

ARUP



Activity 1: Future Cast Group #1

Post Anthropocene



Step one -
Review your scenario

Step two -
What will need to change to help us positively meet the future? Think about social, technological, economical, environmental and political factors

Step three -
What skills and capabilities will social innovators need to make this happen?

Step One Scenario: Both people and planet are on the path to a regenerative world. Society consumes resources at the rate at which they can be replenished, populations are diverse, and societal structures are balanced. Humanity is well on its way towards a shared consciousness and an understanding of Earth's limited resources – that production and consumption are intrinsically linked to the natural environment. There is no 'way' to throw discarded things. What was once known as rubbish or garbage is one of today's most valuable resources and is mined both on land and sea. Global ecosystem services are recognised and valued, helping to improve the quality of both planet and society. Circular processing measures are in place and most nations abide by them. Full life-cycle and ecological resource assessments are mandatory for all new products. Global biodiversity loss has halted, and protected areas are seeing ecosystem recovery. Everyone has, and knows, their carbon quota and daily spend; AI provides daily updates, and state governments penalise overspend. The multi-stakeholder vision for an equitable and thriving future has prevailed.

Step Two What does the screen sector need to change?:



Step Three: What skills and capabilities will be needed?



Activity 1: Future Cast Group #2

Post Anthropocene



Step one -
Review your scenario

Step two -
What will need to change to help us positively meet the future? Think about social, technological, economical, environmental and political factors

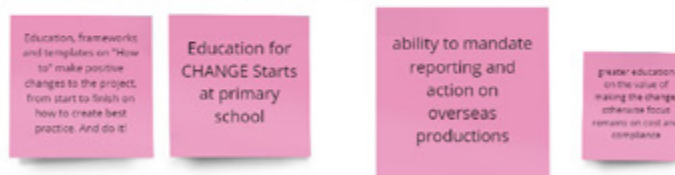
Step three -
What skills and capabilities will social innovators need to make this happen?

Step One Scenario: Both people and planet are on the path to a regenerative world. Society consumes resources at the rate at which they can be replenished, populations are diverse, and societal structures are balanced. Humanity is well on its way towards a shared consciousness and an understanding of Earth's limited resources – that production and consumption are intrinsically linked to the natural environment. There is no 'away' to throw discarded things. What was once known as rubbish or garbage is one of today's most valuable resources and is mined both on land and sea. Global ecosystem services are recognised and valued, helping to improve the quality of both planet and society. Circular processing measures are in place and most nations abide by them. Full life-cycle and ecological resource assessments are mandatory for all new products. Global biodiversity loss has halted, and protected areas are seeing ecosystem recovery. Everyone has, and knows, their carbon quota and daily spend; AI provides daily updates, and state governments penalise overspend. The multi-stakeholder vision for an equitable and thriving future has prevailed.

Step Two What does the screen sector need to change?:



Step Three: What skills and capabilities will be needed?



Activity 1: Future Cast Group #3

Greenbook?
Individual
productions
adopted

Post Anthropocene



Step one -
Review your scenario

Step two -
What will need to change to help us positively meet the future? Think about social, technological, economical, environmental and political factors

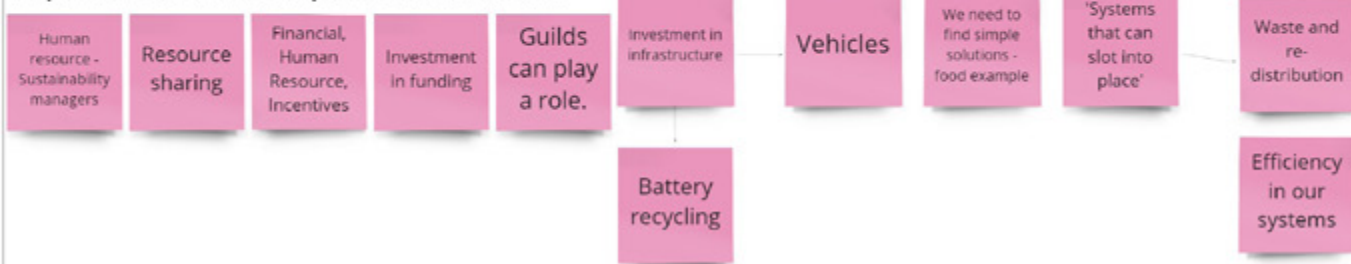
Step three -
What skills and capabilities will social innovators need to make this happen?

Step One Scenario: Both people and planet are on the path to a regenerative world. Society consumes resources at the rate at which they can be replenished, populations are diverse, and societal structures are balanced. Humanity is well on its way towards a shared consciousness and an understanding of Earth's limited resources – that production and consumption are intrinsically linked to the natural environment. There is no 'away' to throw discarded things. What was once known as rubbish or garbage is one of today's most valuable resources and is mined both on land and sea. Global ecosystem services are recognised and valued, helping to improve the quality of both planet and society. Circular processing measures are in place and most nations abide by them. Full life-cycle and ecological resource assessments are mandatory for all new products. Global biodiversity loss has halted, and protected areas are seeing ecosystem recovery. Everyone has, and knows, their carbon quota and daily spend; AI provides daily updates, and state governments penalise overspend. The multi-stakeholder vision for an equitable and thriving future has prevailed.

Step Two What does the screen sector need to change?:



Step Three: What skills and capabilities will be needed?



Activity 1: Future Cast Group #4

Post Anthropocene



Step one -
Review your scenario

Step two -
What will need to change to help us positively meet the future? Think about social, technological, economical, environmental and political factors

Step three -
What skills and capabilities will social innovators need to make this happen?

Step One Scenario: Both people and planet are on the path to a regenerative world. Society consumes resources at the rate at which they can be replenished, populations are diverse, and societal structures are balanced. Humanity is well on its way towards a shared consciousness and an understanding of Earth's limited resources – that production and consumption are intrinsically linked to the natural environment. There is no 'away' to throw discarded things. What was once known as rubbish or garbage is one of today's most valuable resources and is mined both on land and sea. Global ecosystem services are recognised and valued, helping to improve the quality of both planet and society. Circular processing measures are in place and most nations abide by them. Full life-cycle and ecological resource assessments are mandatory for all new products. Global biodiversity loss has halted, and protected areas are seeing ecosystem recovery. Everyone has, and knows, their carbon quota and daily spend; AI provides daily updates, and state governments penalise overspend. The multi-stakeholder vision for an equitable and thriving future has prevailed.

Step Two What does the screen sector need to change?:



Step Three: What skills and capabilities will be needed?



Data Analysis Methodology

Whole sector footprint

The whole sector footprint estimate paired Stats NZ published datasets describing the total sector revenue and spending patterns with emissions factors for the New Zealand economy derived from the GTAP model. The overall calculation process is shown in Figure 1 and this process can be broken into two streams: the expenditure data processing, and the derivation of emissions factors.

In order to map the expenditure of the New Zealand screen sector, a number of datasets published in Stats NZ's national statistics are used. The business performance benchmarker dataset¹ is used to provide enveloping values for the total revenue for sub-sectors. For television productions, confidentiality concerns mean values are not available for 2019/20, and so this value was taken from the latest version of the screen survey². Through combining these two datasets a set of enveloping values was achieved covering screen sector operations aligned with the definitions used by Stats NZ for its previous screen survey reporting. The spending profiles for each sub-sector were modelled using the expenditure profiles contained within New Zealand's national accounts, with the Supply and Use Tables giving profiles of average expenditure for each sector in the economy. These profiles were used to give an assumed breakdown of expenditure across the sectors' supply chain. Enveloping values for the sector expenditure were disaggregated using these modelled profiles to produce a detailed breakdown of expenditure across supply-chains.

The emissions factors were derived from the GTAP model. This dataset is constructed from nationally reported economic data, which is combined to provide a model of the financial linkages between sectors in the global economy. This data is brought together with inventories of direct emissions for these sectors. Through manipulating these two types of data using environmentally-extended input-output analysis (EEIO)³ a set of emissions factors for each sector in the economy may be derived which includes both direct and upstream emissions sources. The GTAP provides data for 57 sectors for 140 countries and regions, including New Zealand, and has been widely used for such assessments across industry and academia.

The modelled expenditure breakdown was used in combination with the GTAP emissions factors to produce a calculation for the sector's GHG emissions in 2019/20. These results were grouped into the reporting categories shown. Due to the uncertainties in using the Stats NZ modelled spending profiles to break out sector spending, it is recommended that this overall footprint is used as a high-level guide to the sector's environmental impacts and that a programme of data collection and reporting is adopted by the sector to aid re-baselining and tracking of emissions in future.

1 [Business Performance Benchmarker](#)

2 [Screen industry: 2017/18](#)

3 [An Introduction to Environmentally-Extended Input-Output Analysis](#)

Data Analysis Methodology

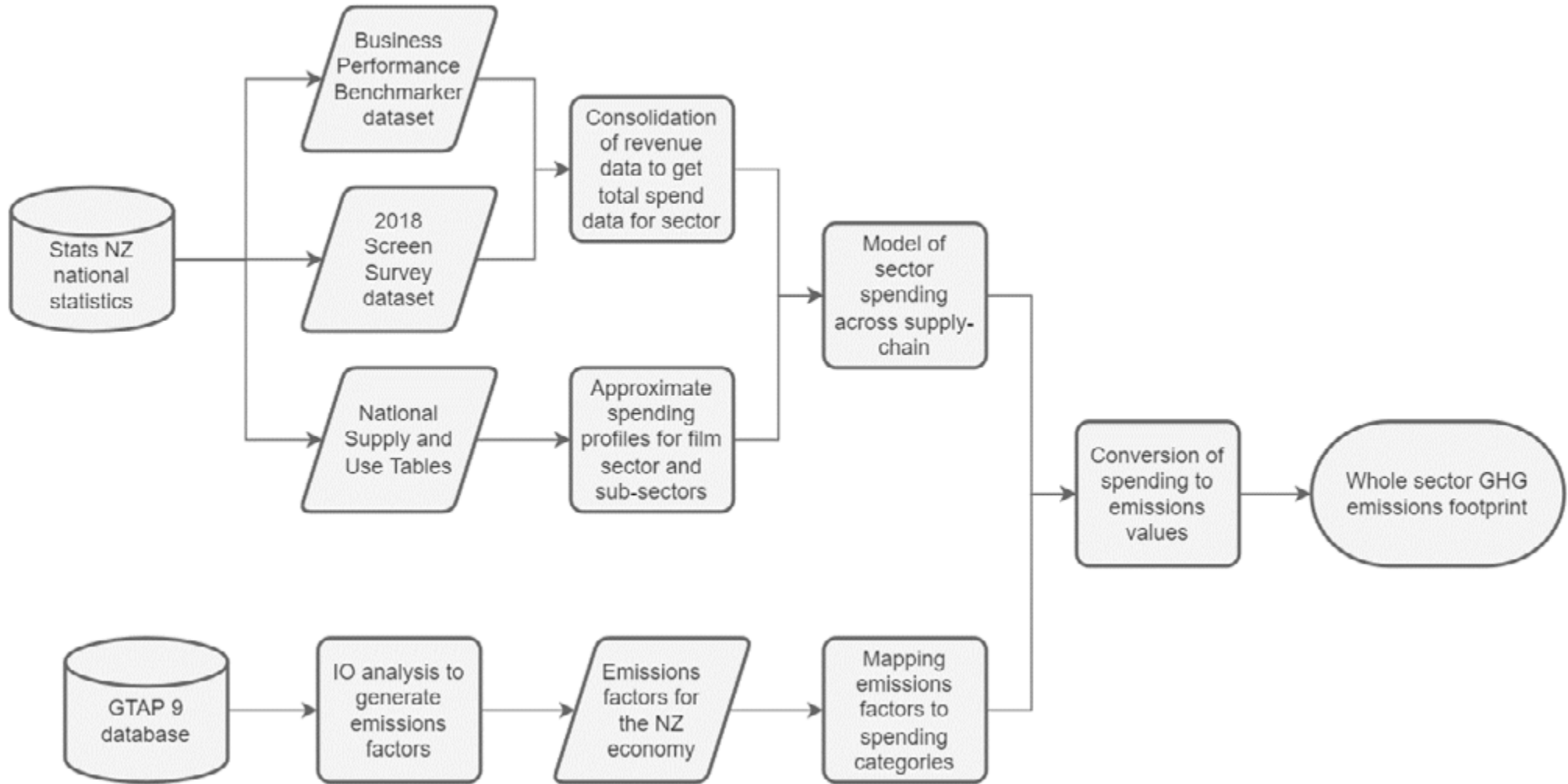


Figure 1: Flow chart showing calculation process for the whole sector footprint

Data Analysis Methodology

Profiles

The profiles for different television typologies were produced using expenditure data provided in the form of anonymised cost plans for productions made in the last 5 years. For each cost plan, data was transcribed and grouped using the reporting categories shown in the report. Each line of spend was mapped to the appropriate GTAP emissions factor to give the footprint. As the cost plans only gave data on spending by the production, emissions calculated from this data only covered scope 2 and 3 sources. Results are quoted as percentages of the indirect emissions

to provide a profile of where emissions occur by production type and avoid the focus being placed on magnitude. The large degree of variation seen for different productions illustrates that individual productions should not be assumed to follow a wider sector trend, and that in future estimating the impact for individual productions before they are made offers the greatest opportunity to anticipate and mitigate emissions.

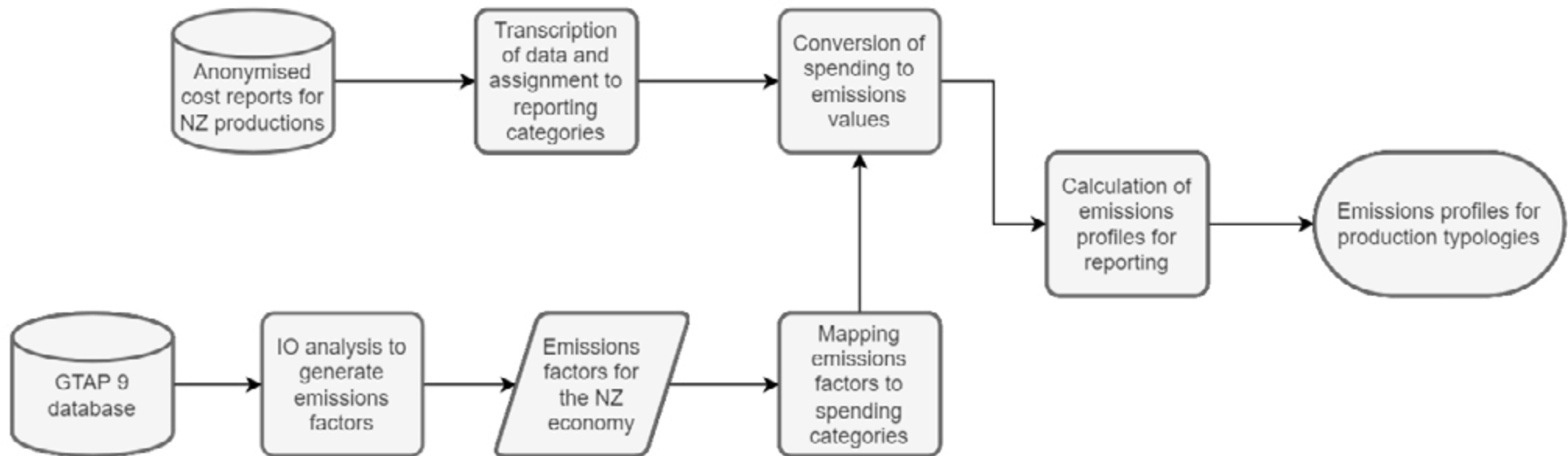


Figure 2: Flow chart showing calculation process for representative emissions profiles for production typologies

Ko te kai a te rangatira, he kōrero.
The food of a chief is dialogue.

ARUP

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