

BROC MEETING – 13 NOVEMBER 2020

CORRESPONDENCE OUT

6. Waste to Energy – Copy of Funding Application for seed funding.
7. Balonne Shire Council – Hebel-Goodooga Road Link – Copy of letter of support.
8. Bulloo Shire Council – Warri Gate Road – Copy of letters of support.

COPY

CRC-P - Round 10 Application

Border Region Future Waste Network

Project Title:

Creating Sustainable Waste Futures for Australian Regional Communities

Provide a brief project description for publication.

Regional and rural communities need to be supported in the transition to a circular economy. This project aims to implement a scalable commercial model for the provision of integrated waste management solutions to regional and rural economies. This project encompasses technological and market research to the establishment of a unique, vertically-integrated 'Future Waste Network' that expands the recycling capacity of communities along the NSW/QLD border, eliminating reliance on high-emission freight and landfill systems. This will help bridge the gap between regional and metropolitan areas' access to social infrastructure networks to enrich regional industry with jobs and clean energy and provide them with a sustainable future.

Provide a detailed description of your project including the project scope and key activities.**INDUSTRY PROBLEM**

In response to climate change, shifting international relations and government policy, the waste sector is rapidly transitioning to support a circular economic model. Regional and rural communities need to adapt to this changing economic environment, and need to be supported in their access to environmentally sound social infrastructure that ensures a sustainable future for all Australians, especially those outside of major metropolitan centres.

PROJECT SCOPE

The project will develop and implement a standalone, scalable, vertically-integrated commercial model for the management of commercial and industrial (C&I) waste in regional and rural communities. The aim is to bridge the gap in these communities' access to sustainable waste management solutions.

To achieve this, a feasibility and proof-of-concept study for C&I waste solutions will be commissioned by Nilwaste Energy Ltd (Nilwaste) with the assistance and industry knowledge of the Border Regional Organisation of Councils (BROC). A commercial model will be developed. Based on the model, Nilwaste will design and roll out the "Border Regions Future Waste Network" (B-FWN) in the Tenterfield, Gundiwindi, and Moree Plains LGAs. Concurrently, Queensland University of Technology (QUT) will operate a demonstration waste-processing plant in Brisbane. QUT will collect, analyse and report on technical operations data from trials of advanced waste treatment processes at the demonstration plant, which will guide the model toward optimal efficiency.

KEY ACTIVITIES

Feasibility Study (6 MONTHS) - DEVELOPING THE MODEL

- *Comprehensive waste auditing in the BROCC area*

Nilwaste conducts a comprehensive waste audit over a 12 week period to generate a data set on the volume and composition of C&I waste output in the BROCC area.

- *Data collation and analysis*

The project administrator receives and collates the data in an appropriate format for modelling and forecasting.

- *Development of commercial model for waste collection, logistics and processing in regional and rural areas*

Using the waste audit data, Nilwaste develops a scalable commercial model for the generic FWN, which includes the three key components of the waste value chain – those being collection, logistics and processing of waste. Each component of the value chain is modelled independently for optimal efficiency, and then vertically integrated into a comprehensive best practice waste management solution.

The model is developed specifically to divert the maximum volume of waste from landfill, and to recover the resource and energy value of the captured waste.

- *Trials for optimising efficiency of processing equipment*

During the feasibility analysis, QUT trials various batching configurations of waste feedstocks and various combined processing methods to achieve optimal technical efficiency for Nilwaste's demonstration plant equipment. QUT collects and collates data from the demonstration plant equipment to determine the volume and composition of waste-derived resource and energy offtakes.

- *Research potential for integrating with local industry*

The project is expected to produce waste-derived resources and energy offtakes that include liquid and gas fuels from Biogas or Syngas and Biochar soil conditioners. The QUT trials are used to identify other potential offtakes with commercial viability. Nilwaste undertakes market research to explore unique opportunities for offtakes in regional and rural areas identified by BROCC. Nilwaste connects waste solutions with local industry, creating functional circular-economy waste networks.

Proof of Concept (18 MONTHS) - IMPLEMENTING THE MODEL

- *Development of a rollout strategy for a FWN for the BROCC area*

Nilwaste, in close collaboration with BROCC and industry stakeholders, adapts its new regional model to create a prioritised roll-out plan for an industry-integrated, best-practice FWN for the BROCC area, called the 'Border Regions Future Waste Network' (B-FWN). A modular strategy is used to ensure that systems are implemented effectively and user uptake is consistent.

- *Commissioning of collection, logistics, and processing plant equipment*

Nilwaste commissions equipment including bins, vehicles, mechanical plant equipment and processing equipment.

- *Modular implementation and operation*

The B-FWN is rolled out in modules that progressively acquire targeted waste streams and geographic zones.

- *Create and distribute industry learning resources to key stakeholders demonstrating benefits of an integrated FWN for regional industry*

Transitioning to a circular economy is a community issue as well as an industry issue. Nilwaste provides periodic feedback to key stakeholders including industry and local government in the BROC area, to ensure all parties are kept apprised of the community's waste outcomes, and the benefits that are gained from the B-FWN.

Provide a summary of the expected project outcomes.

- *Detailed waste profiles are created for the BROC area*

After the collection and collation of waste data during the waste audits, Nilwaste will create waste 'profiles' detailing the outputs from key commercial, industrial and agricultural facilities. These profiles will form a larger, granular data set that enables accurate forecasting of waste volumes across the regional and rural sector. These profiles will inform the development of scalable commercial models, and will continue to be collected and updated throughout operations. The profiles also provide the basis for community engagement initiatives.

- *A comprehensive waste management model is developed*

Nilwaste will develop commercially feasible, standalone models for each component of the waste management value chain – collection, logistics, and end-of-life processing of waste materials, specifically adapted to regional and rural needs. The model for each component will be commercially viable independently, and capable of integrating with pre-existing value chains where necessary. The expected outcome, however, is that Nilwaste will develop a comprehensive model which vertically integrates with all regions of the value chain.

The model will be commercially viable in its own right, and once established, will have no need for further subsidy. The model will be developed to be 'closed-loop', in line with the Australian Government's circular economic aims – that is, outputting no further waste or hazardous byproducts that require remediation or disposal.

The waste reprocessing technologies centred in the modelling will include Anaerobic Digestion, In-vessel composting and Nilwaste's patented Pyrolysis Plant, as well as ancillary mechanical processing equipment and materials recovery equipment. These technologies will be modelled at Nilwaste's demonstration equipment based in Brisbane.

- *QUT Trials optimise technical efficiency*

Using demonstration plant equipment established in Brisbane, QUT will determine how best to combine and batch waste feedstocks to optimise technical efficiency e.g. optimal combination of EPS, LDPE and HDPE for energy-dense fuel offtakes from pyrolysis; optimal preparation techniques for organics waste for expedient biogas recovery in an anaerobic digester. QUT will also be cataloguing the energy and resource offtakes from the plant equipment so that Nilwaste can analyse their commercial potential.

- *Opportunities for integration with local economies are identified*

With the QUT empirical data, Nilwaste will identify opportunities for waste-derived energy and resources to be integrated into regional and rural economies. Nilwaste expects that the offtakes from the FWN will enrich a broad range of sectors that are crucial to regional and rural economies, including agriculture, renewable energy, and water management. Nilwaste's patented pyrolysis technology also has potential applications in the remediation of hazardous chemical wastes that are commonly found in the agricultural industry.

It is expected that liquid and gas fuel offtakes will be supplied as low-cost and low-carbon energy alternatives to regional industry in the Australian Government's 'gas-led recovery'. These fuel sources could also provide consistent, inexpensive, and carbon-offset baseload energy for the expansion of more renewable energy and water infrastructure, which regional communities desperately need. Resource offtakes will be supplied to a number of sectors, particularly to sectors which drive the growth and job market of regional economies. The project will be guided by BROCC to identify key growth sectors for integration with the B-FWN.

- *A rollout strategy is developed for the B-FWN*

Nilwaste will identify targeted waste streams and key BROCC zones for prioritisation. Nilwaste will develop a modular rollout strategy for the FWN which prioritises the collection and processing of these waste streams and key zones, including a project plan and budget.

- *Commissioning plant equipment*

Nilwaste will contact appropriate engineering professionals and equipment manufacturers to commission processing plant equipment appropriate to the needs of the FWN.

- *Modular implementation of B-FWN*

Nilwaste expects that a modular rollout strategy and progressive integration will prevent client users from being overwhelmed and will improve user uptake while retaining a high impact on waste outcomes for the area.

- *Create and distribute industry learning resources*

The project will include an engagement strategy involving detailed communication of waste outcomes to key stakeholders in community, industry and government. The aim of this engagement strategy is to demonstrate the benefits of a sustainable and integrated waste management strategy to regional communities and economies.

What is the national and international state of play in the research area that is contributing to solve the identified industry problem or opportunity? * 2000ca

Provide a description of the **research landscape** relating to the identified industry problem and how this relates to or complements your proposed project.

Support for circular economic models and sustainable waste management practice has grown steadily over the last decade. There is an expanding body of research regarding waste reprocessing technology and practice which will continue to complement and enrich the future-focused waste solutions being provided to the market. As new technologies emerge, they will inform the development of this project and consistently guide it towards higher outcomes.

There remains, however, an identifiable disparity in the development and application of these solutions. It is evident that metropolitan areas are the preferred and targeted market for these solutions, leaving regional and rural communities at a distinct disadvantage. As a result, there is an obvious gap in industry knowledge and research needed to create sustainable waste futures for these communities.

This project is targeting and filling that gap, connecting the high quality and granular research data of metropolitan institutions with the market needs of regional and rural communities. This is fundamentally needed to expedite the provision of the best-practice waste management solutions to these communities, and ensure these solutions are informed by accurate and reliable research.

What is the estimated TRL for your project at the commencement date? *

TRL at commencement: 6

TRL at conclusion: 9

Project duration

May 2021 - April 2023

Provide details on the project milestones including the key activities occurring at each milestone.

May 2021: Commence feasibility study

Jul 2021: End feasibility study

Aug 2021: Submit vertically-integrated model of waste management solutions in regional areas

Sep 2021: Submit draft rollout strategy for B-FWN for review.

Oct 2021: Submit B-FWN rollout strategy for approval. Commence commissioning B-FWN Equipment

Nov 2021: Commence FWN modular rollout

Feb 2022: FWN rollout midpoint - Nilwaste has integrated at least 50% of the FWN infrastructure

Apr 2022: FWN rollout finalisation - Nilwaste has rolled out 100% of projected FWN infrastructure. Commence monitoring phase.

Oct 2022: 6 month monitoring checkpoint

Apr 2023: 12 month monitoring checkpoint

Science and research priorities

Primary alignment *: Environmental Change

Secondary alignment: Energy

Growth sector

Primary alignment: Oil, Gas and Energy Resources (via NERA)

Waste and recycling capability (996/1000ca)

How does your project address gaps in Australia's waste and recycling capability?

This project is crucial to the expansion of Australia's waste and recycling capability as it bridges the gap between regional and metropolitan Australia in terms of access to sustainable waste management infrastructure. By implementing solutions tailored to regional and rural economies, the project will ensure that no sector of Australian industry is missed when it comes to accountability and sustainability in waste management. The project is especially looking to resolve issues with organic waste and plastic films prominent in agricultural industry centres. The project is designed to integrate with local economies, providing the vital link between processing and industrial sectors that is fundamental to the circular economy. Connecting waste-derived products with producers and manufacturers is critical to establishing a sustainable waste future for Australia. The project will ensure that Australia's transition to a circular economy is inclusive and comprehensive.

Assessment criterion 1 (4905/5000ca)

Project alignment with the program objectives

You should demonstrate this by describing:

HOW YOUR PROJECT WILL ADDRESS INDUSTRY-IDENTIFIED GAPS IN AUSTRALIA'S WASTE AND RECYCLING CAPABILITY AND IMPROVE THE COMPETITIVENESS, PRODUCTIVITY AND SUSTAINABILITY OF AUSTRALIAN INDUSTRIES

This project will boost Australia's on-shore waste recycling and re-processing capacity by implementing innovative, data-informed solutions across the entire waste value chain. The aim for this project is to model and then implement a waste management solution that comprehensively deals with the commercial and industrial (C&I) waste needs of regional economies. This will encompass the full C&I waste stream in these areas, not just a singular targeted stream. Using a suite of advanced reprocessing technologies including pyrolysis and anaerobic digestion, the project will create a meaningful expansion in waste reprocessing infrastructure for Australia. With the Australian Government ban on waste plastics, paper, glass and tyres approaching rapidly, this expansion could not be more crucial.

This reprocessing infrastructure will in turn generate a suite of waste-derived resources and energy products. The project spans the full commercial breadth of sustainable waste management, and will centre a plan to connect these waste-derived products to consumers. Through combined market research and industry education platforms, the project will identify existing and expanding markets for waste-derived products, as well as stimulate new potential markets by educating consumers on the benefits of waste-derived products for industry.

As well as creating a comprehensive solution for common C&I waste streams, like LDPE films or food organics, the research conducted through this project has the potential to identify disposal solutions for materials that are more hazardous or difficult to reprocess. This may include composite materials like the Tetra Pak, or chemical waste residues like PFAS or organochlorines. Solving challenges posed by these more complex wastes is well within the scope of this project's aims.

HOW YOUR PROJECT WILL FOSTER HIGH QUALITY RESEARCH THROUGH INDUSTRY-LED AND OUTCOME-FOCUSED COLLABORATIVE INDUSTRY-RESEARCH PARTNERSHIPS

Nilwaste and QUT are partners in the advanced fellowship research program concerning the operation and monitoring of Nilwaste's fourth generation advanced pyrolysis demonstration plant in Brisbane. This partnership enables up-to-date, high-quality research data to move freely between QUT as a research entity and Nilwaste as a service provider to ensure that the solutions moving to the Australian market are outcomes-focused and data-informed, and incorporate industry best practice.

BROC is an industry body closely connected to the needs of regional and rural industry and community. Nilwaste's partnership with BROC offers unique insights and opportunities into endemic regional markets to inform the development of Nilwaste's waste management service model. Connecting QUT and BROC through Nilwaste as a service provider also enables the direct passage of research and information directly to regional economies, a pathway that is often neglected due to the economic focus on coastal and metropolitan centres.

Providing the optimal outcomes to regional and rural communities is central to the waste future of Australia, and this project is ideally suited to provide those outcomes. Strong collaboration between industry and research partners is paramount to this project. This unique partnership coordinates high-quality research from QUT with the outcomes-focused industry knowledge of BROC, mediated through the provision of Nilwaste's FWN solutions.

HOW YOUR PROJECT WILL ENCOURAGE AND FACILITATE SME PARTICIPATION

The lead applicant for this project is Nilwaste Energy Ltd, a waste solutions provider and SME. Nilwaste has partnered with industry and research bodies to facilitate growth in alignment with industry best practice, to produce superior results for the Australian economy. The project will enable Nilwaste to overcome financial and technological barriers to entering regional markets that would otherwise be extremely prohibitive to an SME.

As the lead applicant, Nilwaste's participation will be critical to the completion of the project, and as such, the project is designed to maximise SME participation. The project positions Nilwaste as a solutions provider, forming an integral part of the connection between research centres and regional industry. The collaborative nature of the project benefits all project partners, and Nilwaste is encouraged to grow through its provision of best practice solutions to industry. The project is committed to retaining all benefits and growth opportunities within the Australian market, and encouraging the growth of an Australian SME such as Nilwaste is an ideal method for this as SMEs stimulate Australian economic growth and the expansion of the job market, particularly in regional areas.

Assessment criterion 2 (4993/5000ca)

The quality of your project

You should demonstrate this by describing:

THE RESEARCH AND METHODOLOGIES USED, AND THE ROLE OF PARTNERS IN THE PROJECT

The project will undertake three primary research tasks:

- **WASTE AUDITING**

Waste auditing is a granular analysis of the composition and volumes of waste streams produced by commercial and industrial (C&I) waste generators in regional and rural areas. Nilwaste will implement separation-at-source collection systems at identified sites, and then separate, collect and weigh the receptacles to determine the mass and volume of individual waste streams, as well as define that as a percentage of the overall C&I waste stream. This will also identify waste streams at risk of becoming cross-contaminated, so that management strategies can be developed. Collection from these bins will be conducted three times per week. Frequent collection improves the accuracy of data collection. The waste auditing phase of the project will generate a granular data set for forecasting the current and future needs of the regional waste sector. The waste data will also be disaggregated into waste 'profiles' for individual clients, to inform client and community engagement. Nilwaste will be responsible for supplying the equipment and human resources for this area of research, and for collecting, collating and analysing the waste profile data.

- **TECHNOLOGICAL OPTIMISATION**

To help offset the prohibitive costs associated with regional operation, the project's technical efficiency will need to be optimised. QUT, under the supervision of Senior Research Fellow Dr. Kameron Dunn, will conduct these optimisation trials at an established demonstration facility in Brisbane. QUT will conduct a broad range of trials related to the operation and optimisation of plant equipment, including, but not limited to, how to optimise mechanical pre-processing methods for individual waste streams, and how to engineer interactions between chemical, thermal, biological (anaerobic digestion) processing methods to produce optimal resource and energy offtakes. As challenges or queries emerge throughout the waste auditing or industry research phase, QUT will trial and model technical solutions at the demonstration facility, to be replicated in the FWN.

- **INDUSTRY RESEARCH**

This project will include a thorough investigation of commercial opportunities for the integration of sustainable waste management solutions with regional and rural industry. This will include finding opportunities to connect the waste-derived resources and energy with consumer markets, with a focus on retaining benefits in local economies. Nilwaste and BROCC will collaborate to connect Nilwaste's solutions with industry needs. BROCC's access to local industry and government will be invaluable in this commercial study, and will greatly enhance the ability of the project to integrate with the local economy.

HOW THE RESEARCH WILL ADDRESS IDENTIFIED PROBLEMS, BUILD ON THE CURRENT BODY OF KNOWLEDGE AND ENHANCE THE ADOPTION OF NEW TECHNOLOGIES

This project will generate granular data that enhances the commercial potential of sustainable waste management infrastructure in regional areas. These areas have identifiable gaps in their waste management industry brought about by their lack of reprocessing capacity and technology. This project, adopting a first-principles approach to waste management, will build a new and comprehensive body of knowledge that will enable the implementation of innovative waste-management solutions which boost the reprocessing capacity of these areas and foster sustainable futures for regional and rural communities. This body of knowledge will include a detailed understanding of waste composition and volume produced by regional industry, advanced engineering and technological solutions, and endemic industry knowledge about the expanding markets for waste-derived energy and resources.

This body of knowledge is built specifically to enable and expedite the adoption of new technologies into regional waste-management practice. These new technologies and methodologies will specifically address the current challenges facing the regional waste sector, and will span from cutting-edge reprocessing equipment to innovative and sustainable logistics modelling, to vertically integrate an advanced waste management practice into communities.

THE EDUCATION AND TRAINING OPPORTUNITIES YOUR PROJECT WILL PROVIDE TO BUILD CAPABILITY AND CAPACITY IN THE INDUSTRY AND RESEARCH SECTORS

This project intends to reach out to community, industry and local government stakeholders across a breadth of sectors to provide education and industry learning opportunities surrounding the benefits of an integrated, sustainable waste management practice.

In a broader scope, the project seeks to enrich the capability of regional industry sectors by creating a direct and accessible link between regional industry and metropolitan research centres (QUT). This connection will build the resilience and viability of regional communities towards a sustainable future.

Assessment criterion 3 (4400/5000ca)

Capacity, capability and resources to deliver your project

You should demonstrate this by describing:

PROJECT MANAGEMENT & MONITORING

The Project Administrator will be responsible for administration, monitoring and reporting requirements of the program. The Project Administrator will undertake the following tasks to ensure that the reporting requirements of the Project are met:

- Attend all CRC-P information and training sessions
- Monitor and review data collected and collate data in appropriate format
- Monitor and report on timeframes against agreed project milestones
- Prepare and submit monthly progress reports to all project partners
- Prepare and submit progress reports to CRC Program as requested
- Prepare and submit final report to CRC Program and project partners

CORPORATE

The Nilwaste Board is responsible for Nilwaste's governance including setting the strategic direction of the Company and its objectives. The Directors monitor the business affairs of the Company on behalf of the stakeholders and have adopted corporate governance policies which focus attention on accountability, risk management and ethical conduct.

GOVERNANCE

PROJECT

The project will be undertaken in a tripartite partnership between Nilwaste Energy Ltd., Border Regional Organisation of Councils, and Queensland University of Technology. The project will be managed in coalition by one representative from each partner, who will participate in weekly meetings.

GOVERNANCE

The project plan is drafted by Nilwaste with collaboration from the project partners, and will be approved by all partners prior to the commencement of the project. Amendments from any party to the project plan will require majority approval from all project partners.

SECURITY PROVISIONS

The project requires no significant security provisions. All data collected, particularly waste profile data, is considered confidential and will be stored and handled appropriately. All equipment will be stored securely.

RISK MITIGATION

The representatives from each project partner are experienced risk managers and will develop a risk management plan which will be utilised in the project monitoring process. The main areas of risk in undertaking this project is:

- Time – slippage with project outcomes and timeframes. This is managed by the workflow monitoring by the Project Administrator and actioned via weekly project meetings
- Finances – potential project budget overruns will be addressed and avoided by budgetary oversight by the project partners at weekly project meetings
- Operational Risks - Operational risks to project staff including the potential for handling hazardous materials or operating heavy equipment and machinery. A Workplace

Health and Safety plan will be developed, implemented and closely monitored for the entire duration of the project, including COVID-safe measures.

KEY

PERSONNEL

NILWASTE

- Nilwaste is led by an experienced Board of Directors who have many decades experience in the Engineering, Legal and Finance industries.
- Managing Director Tim Breen is an experienced businessman who has more than 20 years' commercial project experience in both Australia and overseas.

BROC

- Terry Dodd is CEO of Tenterfield Shire Council, whose 20+ years of experience will provide unique insights into opportunities for regional industry.

QUT

- Dr. Kameron Dunn is a Senior Research Fellow in QUT's Centre for Agriculture and Bioeconomy. He has 20+ years in R&D as well as significant experience in process design and optimization; pilot plant design; energy audits and studies; technology evaluation and product recovery. In this project, he will provide support for product assessment and in the pyrolysis optimisation trials at a demonstration facility in Brisbane.
- Associate Professor Geoff Kent has 30+ years' experience in industrial R&D. He is a recognised expert in the logistics and scheduling of organic matter transport systems. He has also been involved in supply chain research associated with biomass energy plants. In this project, he will provide support in the logistics of waste collection and assist in the mechanical pre-processing methods for waste streams.
- Professor Ian O'Hara is Deputy Director of the QUT Centre for Agriculture and Bioeconomy. Ian is a Process Engineer with extensive experience in the biofuels industry in research, consultation, policy development, operations management, process design and engineering. Ian works closely with industry and undertakes consulting projects globally in areas including design of greenfield factories and refineries, development of new integrated agricultural precincts, techno-economics, business strategy and other work in the fields of energy efficiency and process improvement. Ian has been involved in policy development in areas including industrial research, environment, biofuels and renewable energy. In 2016, Ian was appointed by the Queensland Government as Queensland's first Biofutures Industry Envoy. In this project Professor Ian O'Hara will provide support to the project in industry engagement.

FUNDING - TBA

SECURITY - TBA

INFRASTRUCTURE + TECHNOLOGY

The project partners, collectively, have access to a breadth of infrastructure, utilities and technologies that will ensure that this project can be carried out quickly and effectively.

The project currently has access to logistics vehicles, small-scale processing units (shredding, dewatering etc.) and various analysis and testing units. By the commencement of the project, a demonstration plant will be available in Brisbane comprising multiple reprocessing

technologies. With the assistance of CRC-P funding, the remaining infrastructure and technology requirements of the project can be met.

IP

Nilwaste has an exclusive licence for the IP for the patented Advanced Demonstration Pyrolysis Unit in Australia. All other OEM equipment will be commissioned and supplied with a non-exclusive licence to operate.

Assessment criterion 4 (4898/5000ca)

Impact of the grant funding on your project

You should demonstrate this by describing:

THE LIKELIHOOD YOUR PROJECT WOULD PROCEED WITHOUT THE GRANT AND HOW THE GRANT WILL IMPACT THE PROJECT

The project is unlikely to proceed without CRC-P funding. The final model will be commercially self-sufficient, but the geographic isolation of the target areas create prohibitive Capex and Opex costs for the research phase, which Nilwaste cannot overcome as an SME. The grant funding will help overcome these prohibitive factors, allowing solutions to be delivered to market as soon as possible.

Specifically, CRC-P grant funding will:

- a) increase human resource budget for waste-auditing stage, creating a more comprehensive industry data set for forecasting the regional waste market;
- b) increase capital equipment budget for the FWN, to overcome initial barriers to entry and to increase the potential service area and capability of the FWN;
- c) expedite time frames for the modular rollout of the FWN by front-loading adequate resource expenses for the project,

THE TOTAL INVESTMENT THE GRANT WILL LEVERAGE AND WHY THE AUSTRALIAN GOVERNMENT SHOULD INVEST IN THE PROJECT

The central goal of the project is diverting landfill and creating a sustainable waste management future for regional communities. This project offers substantive return on investment to the Australian Government, in both environmental and economic outcomes.

The FWN generates value for the Australian Government by stimulating economic growth and expanding the regional job market across a breadth of skill sets. The project focuses on proximity principles for waste management, reducing the carbon emissions of the waste sector by restructuring inefficient logistics models. This project will leverage a total investment of \$2 million over two years, split between the project partners and the CRC-P funding, with a projected 4:1 return on investment for the Australian Government. The project also saves costs to the Government that are quantifiable against landfill levy rates, by curbing the growth of legacy landfill remediation costs.

This project will generate low-carbon or carbon-neutral alternative gas fuels to lead the "gas-led recovery" from coronavirus that the Australian Government seeks to implement. This sustainable fuel supply from the FWN can also be used to underwrite the baseload energy needs of expanding critical renewable energy or water management sectors in regional areas.

The project seeks to foster local accountability for sustainable waste management by demonstrating the commercial and environmental advantages of sustainable waste management to local communities. By extension, it is imperative to the project that the resources, energy and trade value derived from waste be retained in Australia, and more specifically, in the communities that produce that waste. There are no overseas partners or foreign interests represented in this project, and as such, the project is wholly focused on strengthening Australia's on-shore recycling capabilities and circular economy.

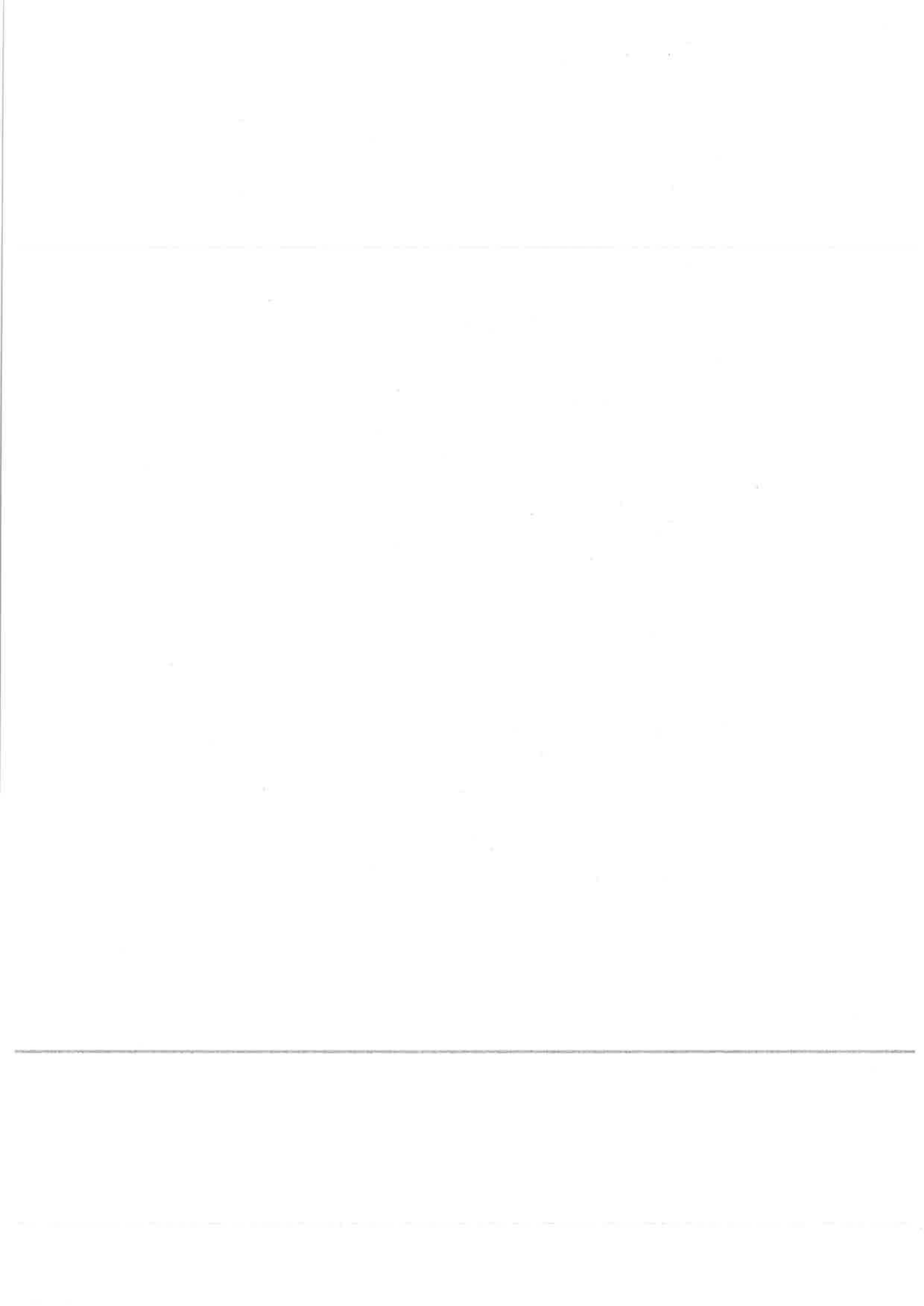
THE COMMERCIAL POTENTIAL OF THE PROJECT, INCLUDING [...] NEW PRODUCTS, PROCESSES OR SERVICES

The development of a FWN model has commercial potential across regional Australia. The Australian waste market is currently undergoing rapid change and requires adaptive solutions to be provided to the market. The project will develop and establish a standalone, scalable, vertically-integrated commercial model for the management of C&I waste in regional and rural communities. This service model will be replicable in regional and rural economies across Australia.

The FWN will transform waste into liquid and gas fuels that can be adapted to market needs through sophisticated gas management systems. Nilwaste is particularly interested in the extraction of blue- and green-hydrogen fuel from the process, as well as providing commercial liquid and gas fuels derived from Biogas and Syngas. This sustainable fuel supply from the FWN can underwrite the baseload energy needs of expanding the renewable energy economy in regional areas.

The FWN will also generate resources for key regional and rural industries such as agriculture and construction, including biochar. The FWN will be specifically designed to integrate with the industry needs of the region it services. It's commerciality is rooted in an adaptive and modular approach, compared to current waste-management models.

The partners' goal for this project is to support regional and rural communities through the urgent transition to a circular economy by researching and providing best-practice waste and bioenergy solutions. The model is specifically designed so that any and all spillover benefits from the FWN are retained in the community producing that waste. This in turn fosters community accountability for waste and an exponential potential for economic growth across the regional sector, the benefits of which are reaped by the Australian economy at large.



BROC Border Regional Organisation of Councils



9 October 2020
G/21

Mr Matthew Magin
Chief Executive Officer
Balonne Shire Council
PO Box 201
ST GEORGE QLD 4487

COPY

Dear Mr Magin

Re: Letter of Support – Upgrade of the Hebel – Goodooga Road

At the August 2020 meeting of BROC (Border Regional Organisation of Councils), an organisation consisting of nine (9) cross border Councils extending from Tenterfield in the east of NSW, to Bulloo Shire in the south west of Queensland, members resolved in support of the application by Balonne Shire, under the Heavy Vehicle Safety and Productivity Program Round 7, to upgrade the Hebel - Goodooga Road section within Queensland.

Sealing the 106 km of this Road would provide a reliable, all weather access between Brewarrina and Hebel, passing through Goodooga.

The major beneficiary of the proposed upgrade would be the livestock carriers and landholders throughout the area. The upgrade would provide a direct route, shortening current travel distance by 100 km.

The Objectives of BROC support this application:

- Advocate for the best outcomes for the region at a state and federal government level;
- Ensure the sustainability of the region through contributing to the effectiveness of all member councils; and
- Undertake projects that have a material benefit to some or all member councils of the Organisation to promote regional cooperation and the efficiencies of individual councils.

Yours sincerely

Cr Peter Petty
Chairman
Mayor, Tenterfield Shire Council

E-MAILED
9/10/2020

SCANNED

8



1 September 2020
G/21

COPY

The Hon Michael McCormack MP
Deputy Prime Minister
Minister for Infrastructure, Transport & Regional Development
PO Box 6022
House of Representatives
Parliament House
CANBERRA ACT 2600

Dear Deputy Prime Minister

Re: Letter of Support – Warri Gate Road

I write in my position as Chair of BROC (Border Regional Organisation of Councils), an organisation consisting of nine (9) cross border Councils extending from Tenterfield in the east of NSW, to Bulloo Shire in the south west of Queensland.

Bulloo Shire is seeking funding to seal the remaining 149 km of the Warri Gate Road which extends from Noccundra to the Queensland Border where it connects to the Silver City Highway which is currently in the process of being sealed by the NSW Government.

The Warri Gate Road is a connector road to this Highway which will see the eventual sealing of a route that would connect Darwin, Mt Isa, the Tablelands and Central Queensland to Broken Hill, Adelaide, Melbourne and Sydney.

Bulloo Shire's proposal to the Federal Government is to seek funding of \$74 million over ten (10) years which would sustain the Council as well as the regional contractors working in this area.

As Chair of the BROC group, I give the full support of all member Councils for the funding being sought by Bulloo Shire for this important road infrastructure.

Yours sincerely

Cr Peter Petty
Chairman
Mayor, Tenterfield Shire Council

Also to:
Hon Mark Bailey MP
Minister for Transport +
Main Roads - QLD

Hon Paul Toole MP
Minister for Regional Transport
+ Roads - NSW
cc to Ann Leahy MP