

Project Details

Title of Project

Roadmap to achieving 100% Renewable Energy for Noosa Biosphere

Is your project

Small < \$20K Large > \$20K

Name of lead project proponent/organisation

Zero Emissions Noosa Incorporated(ZEN Inc)

Project Partners

Noosa Biosphere Community Association, Sunshine Coast Environment Council, Tourism Noosa, Noosa Chamber of Commerce, Innovate Noosa, Noosa Shire Residents and Ratepayers Association, Central Queensland University, Cleantech Sunshine Coast, and private businesses including EnviroProjects, Ecotekk, SPS Energy, Smart Grid Energy, Our Power

Contact Details

Geoff Acton

Name of Project Leader:

Geoff Acton

Phone:

0409 622 987

Email:

geremida@gmail.com

Summary of project aims and objectives (200 words) – public statement

The project will identify the most efficient and cheapest mix of renewable energy and energy efficiency measures needed to eliminate all carbon dioxide emissions arising from electricity consumption in the Noosa Shire by 2026.

Consumption of grid electricity causes 69% of Noosa's carbon dioxide emissions. Reducing these emissions to zero complements Noosa Council's internal Zero Emission Strategy and supports NBRF's specific objective of "progressing towards ZEN."

The project will identify and rank possible mixes of renewable electricity generation and energy efficiency measures to achieve the goal. It will identify actions to drive uptake of renewable energy based on the consultant's experience and from community consultation.

We will model scenarios of technology choices to quantify their effect on the electricity network and the goal of zero emissions.

The project will provide focus for community engagement during the project and beyond, building upon methods used successfully in similar local areas.

It will inspire local people and especially businesses to invest in renewable energy, energy efficiency, and innovative local commercial activity.

It will support the ZEN Inc initiative of a community of local renewable energy businesses to capture an estimated \$100M of local projects needed to achieve zero emissions by 2026. It will enable partnering with Energex/Energy Queensland in the transition to a system of 100% clean electricity.

Project Plan

The overarching purpose of this grants round is prosperity from protection, with a focus on "Big Ideas" in four priority areas.

Please indicate which of these priorities your project responds to, noting that your project could be relevant to one or more of these priority areas.

Select Priority Areas

- *Contribution to the long-term health of Noosa River, Estuary and downstream marine values for current and future generations.*
- *Contribution to the best practice and innovative management of our hinterland, particularly Kin Kin catchment, to deliver sustainable use of our land, water and agricultural assets.*
- *Improved biodiversity management within the Biosphere, including those with a focus on icon species.*
- ***Sustainable socio-economic development proposals, feasibility studies, prospectus or new financing mechanisms which can deliver long term prosperity and protection to the Biosphere and its communities.***

Project Details

In no more than 600 words, please indicate how you intend to undertake the project, clearly describing:

- *The project's objectives and methodology*
- *Key stages of the project and milestones*
- *An indicative timeline across the life of the project*
- *How your project activities will achieve your chosen NBRF Priority Area(s)*

The project's objectives and methodology

To achieve the UN Paris Agreement to keep global warming to 1.5C and avoid the devastating impact of climate change, carbon emissions must be reduced.

The project will develop a road map of community and business actions, backed up by modelling, to define pathways to Zero Emissions in Noosa by 2026.

ZEN Inc has reviewed similar roadmaps developed for other jurisdictions and the approach that stands out uses a rigorous modelling approach to quantify recommended energy efficiency, and renewable energy generation actions that will achieve the zero emissions target.

The methodology and proposed timeline are set out below.

Task 1. Inception meeting (week 1)

This ensures there is a shared understanding and agreement regarding the project objectives, scope, methodology and deliverables.

Task 2. Community Consultation (weeks 2-5)

This is a critical part of the project and is used to both inform the general community and businesses about the project, as well as receive their feedback and appetite for particular technologies as well as options to drive the uptake of these technologies.

We propose online surveys for community and businesses, at least two community forums, and meetings with the business community, Council, local renewable energy suppliers, and other local entities who are driving increased renewable energy uptake.

Task 3. Development of Programs to Drive Uptake of Renewables (weeks 2-5)

This will be performed in conjunction with Task 2. An initial suite of programs will be presented during the community consultation process and refined in response to feedback.

Task 4. Modelling scenarios of possible uptake (weeks 6-7)

Based on the feedback from Task 2 and the programs identified in Task 3, modelling will be undertaken of possible scenarios to achieve 100% renewable energy for Noosa.

Task 5. Revision of Programs and Supplementary Modelling (weeks 8-9)

A revision of programs will be undertaken primarily to optimise the uptake of technology options such as batteries and demand side management that could be used to manage high penetrations of renewable energy. These scenarios will also be modelled. Typical costs and benefits will be presented.

Task 6. Draft Report (week 10)

A draft report will be submitted for review by ZEN Inc and other stakeholders.

Task 7. Final Report (2 weeks after receiving feedback on the Draft Report)

Development of the recommended programs will provide focus for community and stakeholder engagement using methodology successfully used in similar jurisdictions.

The report will provide broad costs and financial payback for recommended project options. Based on similar studies, engaging with the community will create an appetite for increased use of renewable energy and energy efficiency measures.

Dr Rob Passey(ITP Renewables) will guide the community consultation and author the report, all in conjunction with ZEN Inc. Rob has conducted similar studies for Zero Emissions Byron and East Gippsland Shire Council.

Modelling establishes the baseline and quantifies the effectiveness of renewable energy and efficiency scenarios in reducing emissions whilst matching projected electricity load. It uses:

- Load data from Energex zone substation in the Noosa LGA at 30 minute intervals
- Existing installed PV for residential and business, including what is self consumed and feed-in which is used within Noosa
- Existing solar hot water(SHW) and heat pump hot water(HPHW)
- Scenarios representing business as usual, stretch targets and a middle path
 - energy efficiency improvement measures
 - increased residential PV (currently ~30% of households)
 - significantly increased business PV (currently <3%)
 - solar farms within Noosa, or outside the LGA funded by Noosa residents
 - increased SHW and HPHW adoption
 - adoption of storage technologies for load shifting(when the sun doesn't shine), eg batteries
 - load shifting of night rate hot water to match daytime peak PV production
 - demand management (reduction of peak loads)
 - increased green power adoption
 - contribution of Commonwealth legislated RET and Queensland aspirational RET

The modelling will be conducted by Dr Ben Elliston(ITP Renewables) using open source NEMO software developed at University of NSW under an ARENA grant. Ben has successfully used NEMO for modelling at a national and local level.

The scenarios will be developed in consultation with the wider community and business groups.

During the course of the project, the consultant and ZEN Inc will engage with ZEN partner organisations, local businesses who have renewable energy as their central focus, and interested members of the community.

ZEN Inc will ensure that the project has transparency by publicly reporting on regular progress meetings with stakeholders, and publishing drafts of the report.

What are the main risks or limitations of your project? How might you mitigate those risks? (max. 300 words)

The chosen project approach is an adaptation of similar assignments delivered by personnel with proven experience in the field of renewable energy.

ZEN Inc has reviewed previous reports by ITP Renewables, and has identified areas for localization, and agreed areas for adjustment and enhancement. The project will benefit from the consultant's evolving methodology, based on what has worked well.

The risks largely relate to delivery of the defined project. Risks therefore are more in ZEN Inc's control, as the scope and activities are well defined, and proven to work elsewhere.

ZEN Inc's Project Officer, who is experienced in management of consultancies, will closely monitor progress against milestones.

Regular stakeholder progress meetings will be held and reported on to provide transparency.

A payment plan based on defined deliverables will be agreed with the consultant.

If Dr Rob Passey becomes unavailable, eg through sickness or accident during the project, ITP Renewables have another trained Senior Consultant who could complete the project.

Achieving effective stakeholder engagement is a risk, which will be mitigated by key ZEN Inc members who have wide experience in community engagement to assist Dr Rob Passey with the organization of community consultation.

Drafts of the model and report will be available for stakeholder review to ensure the final report meets the project objectives.

Please explain how each of your project partners will contribute to the project, and how you intend to manage the collaboration. If relevant, please indicate if your participating organisations have worked together in the past. (max. 300 words)

The initial formation of Zero Emissions Noosa in 2016 was established via a Memorandum of Understanding signed by 15 organisations (including Noosa Council and two universities) wherein signatories committed, to the best of their ability, to the goal of zero emissions by 2026. ZEN has developed a strong and respectful relationship with these key economic, community and environment organisations across the Noosa shire. These links will enable us to communicate with a broad cross section of the Noosa community.

Other groups will contribute including the ZEN Inc fostered community of renewable energy businesses, local community electricity bulk buy and PV investment company Our Power, the express support of local investors, as well as interested community members.

All of the above stakeholders will participate in community workshops, be encouraged to contribute new ideas, and invited to review drafts of the modelling and report.

The alliance members all participated in the formation of ZEN Inc and many ZEN Inc key members play leading roles in other participating groups.

Project Budget

Please provide a complete budget for your project indicating whether there is any in-kind or cash contribution to be made by the participating partners.

Organisation	Description of Expenditure	Cash contribution (NBRF grant)	In-kind contribution	Total
ITP Renewables	Consultancy fee(inc GST)	\$19,800		\$19,800
CQU	Venue provision		\$1,000	\$1,000
ZEN Inc	See below		\$18,600	\$18,600
Renewable Energy businesses	Expert advice		\$1,000	\$1,000
	TOTAL	\$19,800	\$20,600	\$40,400

Please provide justification for the funds requested.

ZEN Inc & other local inputs – in-kind contribution @ \$50/hour

- Review of similar studies and recommendation of approach for ZEN Inc and recommended consultant – already done (40 hours)
- Collation of local data required for modelling (already done 32 hours – plus 24 hours to go)
- Logistical organization/advertising of workshops (48 hours)
- Running workshop sessions in conjunction with ITP Renewables (24 hours)
- Definition of scope and formal engagement of consultants (16 hours)
- Ongoing project management, including reporting (12 weeks * 4 hours = 48 hours)
- Assistance in determination of modelling scenarios (24 hours)
- Assistance in determination of recommended actions (24 hours)
- Arranging stakeholder engagement (24 hours)
- Reviewing draft models and draft report, collating feedback (40 hours)
- Communicating outcomes (24 hours)
- Consultant meals & accommodation (4 * per diem rate \$250 = \$1,000)
- TOTAL = 44 days * \$400 + \$1,000(per diem) = \$18,600

Responses to Selection Criteria

(Max. 300 words for each criteria)

Criteria 1 (Weighting: 30%)

Clear alignment with one or more of the NBRF Priority Areas.

To achieve the UN Paris Agreement to keep global warming to 1.5C and avoid the devastating impact of climate change, carbon emissions must be reduced.

The project will develop a road map of community and business actions, backed up by modelling, to define achievable pathways to Zero Emissions in Noosa by 2026.

Our project addresses all 4 priority areas. All major scientific bodies (including the Intergovernmental Panel on climate Change and IUCN) have recognised the serious impacts of climate change on eco-systems, including waterways, oceans and species.

For Noosa, the iconic koala has been noted to be particularly at risk from climate change. The International Union for Conservation of Nature (IUCN) 2009 report Koalas and Climate Change has noted: "Koalas have very limited capability to adapt to rapid, human-induced climate change, making them very vulnerable to its negative impacts".

Our project is thus an essential part of the global jigsaw of effort which is required. We cannot ask others to contribute if we do not also contribute.

The most direct focus of our proposal is within the socio-economic criterion. Globally, there is an accelerating shift to renewable energy occurring, and we can position the Noosa community and businesses as leaders in this field.

The project will provide focus for community engagement during the project and beyond, building upon methods used successfully in similar local areas.

It will inspire and mobilise local people and especially businesses to invest in renewable energy, energy efficiency, and innovative local commercial activity.

Criteria 2 (Weighting: 30%)

Strong project management, design and delivery mechanisms to achieve project goals, and wherever appropriate, collaboration between organisations with demonstrated delivery capacity.

The project will be a collaboration between ZEN Inc and ITP Renewables who have undertaken similar studies for Zero Emissions Byron and East Gippsland Shire Council. ITP Renewables have a strong track record having worked for ARENA, and also have strong links with the University of New South Wales and the Australian Photovoltaic Institute.

ZEN Inc has reviewed similar roadmaps developed for other jurisdictions and ITP Renewables' approach stands out by a rigorous modelling approach to quantify recommended energy efficiency, and renewable energy generation actions that will achieve the zero emissions target.

We can thus be confident we will have clear and justifiable directions for action.

ZEN Inc will draw on our partner organisations, the emerging community of Renewable Energy businesses, and nascent local groups such as Our Power, together with very serious local investors.

ZEN Inc's Geoff Acton, who has a deep history of Project Management, will manage the engagement with ITP Renewables. We have set out a clear statement of the methodology, open reporting and risk mitigation measures that we are confident will lead to a successful outcome.

In addition, the ZEN Management Committee draws on a breadth of project management and business expertise, including former councillor Vivien Griffin, John Martin, emeritus Professor with Latrobe University, Joe Shlegeris, successful businessman, Dr. Carina Anderson from Central Queensland University and Annie Guthrie, President of Noosa Biosphere Community Association.

Criteria 3 (Weighting: 20%)

Significant co-investment (cash or in-kind) from project partners.

This project will be a collaboration between ITP Renewables, ZEN Inc and its partner organisations, the emerging community of Renewable Energy businesses, nascent local groups such as Our Power, some serious local investors, together with the Noosa community and businesses.

Our partner CQU will provide required venues.

ZEN Inc and our partner organisations will provide significant in-kind contributions, including

- Review of similar studies and recommendation of approach for ZEN Inc and recommended consultant – already done (40 hours)
- Collation of local data required for modelling (already done 32 hours – plus 24 hours to go)
- Logistical organization/advertising of workshops (48 hours)
- Running workshop sessions in conjunction with ITP Renewables (24 hours)
- Definition of scope and formal engagement of consultants (16 hours)
- Ongoing project management, including reporting (12 weeks * 4 hours = 48 hours)
- Assistance in determination of modelling scenarios (24 hours)
- Assistance in determination of recommended actions (24 hours)
- Arranging stakeholder engagement (24 hours)
- Reviewing draft models and draft report, collating feedback (40 hours)
- Communicating outcomes (24 hours)
- Consultant meals & accommodation (4 * per diem rate \$250 = \$1,000)
- TOTAL = 44 days * \$400 + \$1,000(per diem) = \$18,600

Our local community of Renewable Energy businesses will provide Noosa specific advice and general expertise based on their real world experiences.

In total we estimate a co-investment of \$20,600.

Criteria 4 (Weighting: 20%)

Evidence of strong potential for engagement with broader Noosa region and community.

The initial formation of Zero Emissions Noosa in 2016 was established via a Memorandum of Understanding signed by 15 organisations (including Noosa Council and two universities) wherein signatories committed, to the best of their ability, to the goal of zero emissions by 2026. ZEN has

developed a strong and respectful relationship with these key economic, community and environment organisations across the Noosa shire. These links will enable us to communicate with a broad cross section of the Noosa community.

The program of community engagement is designed to reach beyond our partners, and we see significant involvement from them. This includes the ZEN Inc fostered community of renewable energy businesses, local community electricity bulk buy and PV investment company Our Power, serious local investors, as well as other interested community members.

It is expected that some of the recommendations will add impetus for current ZEN Inc initiatives such as the 100 Go Solar program to consolidate the collective of local renewable energy businesses and seize the opportunity presented by \$100+M of business in Noosa.

The recommendations will also identify areas ripe for further research by universities.