



ENVIRONMENT
INSTITUTE OF
AUSTRALIA AND
NEW ZEALAND

**Submission: SEQ Climate Change
Management Plan (Draft) -
Response**

**Client: Queensland Department of
Infrastructure and Planning**

Submission from: Environment
Institute of Australia and New
Zealand, South East Queensland
Division

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Executive Summary

The Queensland Government has released a plan for wider community comment covering the SEQ region and relating to the effects of climate change. This is the Draft South East Queensland Climate Change Management Plan (SEQ CCMP). The following submission commenting on this plan has been prepared by the Environment Institute of Australia and New Zealand, South East Queensland Division (EIANZ-SEQ).

Our discussion (Section 2) and recommendations (Section 3) cover issues we consider highly relevant to the successful implementation of this plan. The use of the planning framework as a mechanism for change is strongly endorsed by the Institute.

We commend the government for adopting a forward thinking intent to accommodate climate change into future aspirations of the wider community in this fast growing region.

However, given the commitment of the Government to continued unsustainable population growth in the region, our recommendations are all important. We have adopted these recommendations recognising that several vital community resources, primarily water, the stability of local and regional ecosystems, energy supply and transport services are limits to growth. We consider these as capped such that a more efficient per capita footprint will help determine our future resilience in SEQ.

Our recommendations are as follows:

Recommendation	Description	SEQ CCMP Ref
Group A: Communications		
Recommendation A-1	Promote the rationale for the SEQ CCMP and SEQ CCMP changes to changing climate effects to targeted sectors of the community. Apply lessons learned in encouraging and gaining community support for water management in the recent SEQ drought.	Section 5.2.6
Recommendation A-2	Support professionals, practitioners and skilled communicators to ensure reliable and reputable information is presented to the public on a regular basis, e.g. EIANZ forums	Section 5.2.6
Recommendation A-3	Illustrate pictorially how future infrastructure may appear under SEQ CCMP as compared to now, e.g. an enhanced Air Train versus Airport Link.	Section 5.2.6



Recommendation A-4	Develop a central communication system that integrates relevant information from all government departments to assist in directing behavioural change and building community resilience.	Section 5.2.6
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Recommendation	Description	SEQ CCMP Ref
Group B: Targets and actions		
Recommendation B-1	<p>Add targets and performance measures for planning adaptation and mitigation:</p> <ul style="list-style-type: none"> ▶ Maximum cap for regional emissions / resource consumption; ▶ Reductions per capita in key areas; and ▶ A corresponding declaration of cap / volume per capita limits for these resources. <p>Models for these issues are emerging (e.g. London’s neutral carbon scheme). Another example includes the healthy waterways “Report Card” targets and performance.</p>	Section 5.2
Recommendation B-2	Use established processes to measure, report and plan to manage targets, e.g. standards such as AS/NZS ISO 14064, AGIC’s rating tools, GRI indicators and legal instruments such as RET, NGER.	Section 5.2
Recommendation B-3	<p>Minimise Greenfield developments and increase densities, without degrading quality of life. Allow Greenfield development if it is:</p> <ul style="list-style-type: none"> a) Carbon neutral; b) Can be accommodated without exceeding the carrying capacity of key resources, such as water, public transport, energy and biodiversity resources (maintenance of regional ecological corridors); and c) Limits private car use. 	<p>Section 3.1 Tables 4 and 5</p> <p>Section 3.2 Table 6</p>



<p>Recommendation B-4</p>	<p>Embed Climate Change into SEQ IPP:</p> <ul style="list-style-type: none"> ▶ Mandate targets and tools (as in Recommendations B1 and B2) to: <ul style="list-style-type: none"> – Undertake fully costed GHG and energy monitoring / reductions; and – Climate change vulnerability assessments and adaptation initiatives, e.g. increased flooding; ▶ Use GHG profiling to identify the most carbon-effective urban form, e.g. high-density housing that also incorporates improved energy efficiency to meet targets; and ▶ Seek partnerships to create infrastructure-led development of that urban form. 	<p>Sections 2, 3, 4 and 5</p>
<p>Recommendation B-4</p>	<p>Focus on the rapid development of renewable energy guidelines / appropriate stimulation actions to help manage demand and supply (feed-in tariffs, off-peak discounts, time-of-day based energy costs, water and energy efficient labelling).</p> <p>Improve product information to the community about whole of life energy costs, life span, repairability, recyclability, etc.</p> <p>Encourage “green jobs” that facilitate the transition to a lower carbon economy.</p>	<p>Sections 5.2.1, 5.2.3, 5.2.5 and 5.2.6</p>
<p>Recommendation B-5</p>	<p>Define climate change proficiencies for agreed roles and identify, develop and accredit climate change training and its assessment.</p> <p>Support accreditation, certification and development of climate change practitioner skills (trades, RPL, CPD)</p>	<p>Section 5.3.4 Draft action 31</p>



Recommendation	Description	SEQ CCMP Ref
Group C. Discovery and use of new knowledge		
Recommendation C-1	Develop scenario models for climate related risks to ensure future developments are climate resilient. As reliable new knowledge emerges, update projections, practices and stakeholder's awareness / nimbleness to change.	Section 2.3
Recommendation C-2	Develop mitigation measures and climate change adaptation strategies throughout the SEQ CCMP built upon scenario models and mechanisms for their review and adjustment over time.	Section 2.3 and 2.4
Recommendation C-3	As part of the communications strategy, include mapping as an important communication tool to illustrate new knowledge of areas at risk, with changed vulnerability or with opportunities for renewable energy.	Section 5.3.1, Draft action 24 Section 5.2.3 Draft Action 12
Recommendation C-4	Prepare an inventory and assessment of the SEQIPP's contribution and adaptation to climate change.	Section 5.3.2 Draft action 26

Recommendation	Description	SEQ CCMP Ref
Group D. Maintenance of Biodiversity		
Recommendation D-1	Develop research program(s) to identify long term biodiversity conservation risks and opportunities and their management. Use scenario models, field research and resource mapping to understand changes and to optimise management of biodiversity, e.g. ecosystem migration, biosequestration.	Section 5.3.3 Draft Actions 29 and 30 Section 5.2.4 Draft action 15
Recommendation D-2	Re-evaluate and recognise the benefits of biodiversity to urban development, e.g. Greenfield communities.	Section 5.3.4 Draft action 31



Recommendation	Description	SEQ CCMP Ref
Group E. Institutional arrangements		
Recommendation E-1	Improve coherence and nimbleness of climate change planning decisions: <ul style="list-style-type: none">Between government departments / private sector, e.g. Department of Infrastructure in SEQ CCMP; andIn response to rapid change in the Climate and evolution of planning documents, e.g. SEQ CCMP to Q Climate to Coastal Plan.	Sections 5.2 and 5.3
Recommendation E-2	Ensure local government planning schemes address Climate Change.	Sections 5.2 and 5.3
Recommendation E-3	Declare a set deadline for the preparation of specific management strategies for mitigation and adaptation aspects of the full set of DROs.	Sections 1.4 and 5

Recommendation	Description	SEQ CCMP Ref
Group F. Documentation		
Recommendation F-1	Ensure the 32 draft actions are linked to emissions targets.	SEQ CCMP
Recommendation F-2	Ensure the 32 draft actions are linked to the SMART program.	SEQ CCMP
Recommendation F-3	Ensure gap between SEQ Regional Plan and SEQ CCMP (described in submission Section 2.4.1) is closed.	SEQ CCMP

Overall, EIANZ stress the need for funded, swift and timely incorporation of appropriate design mechanisms and structures to set the change plan for the future. We recognise, as a key starting issue, the need for in-depth community support: a support that will only come by consensus and knowledge. Consequently, a communication system, based upon impartial and accurate public advice by reputable and trusted spokespersons, is an initiating condition.



To maintain credibility and currency this has to be backed by an in-depth and long term commitment to expanding knowledge. The result is a proactive profile in any debate on climate change issues and sustains momentum for change. The use of specialist panels of advisors has proved to be highly effective in public communications of environmental issues, such as agreement and support for management options for healthy waterways.

A fundamental problem for the successful implementation of the SEQ CCMP is an acceptance of continued population growth the Region while attempting to achieve Q2 targets. The State Green Target 1 to cut Queensland's carbon footprint by one third through reduced car and electricity use is only achievable through per capita agreement to reduce consumption. The loss of freedom of access to all things taken for granted is the challenge of the future that requires courage, political resolve and bipartisan support. Without these commitments, our attempts at carbon reduction will be negated.

This will require a new vision not based upon our dependence on growth as the only possible future. Our vulnerability to climate change impacts as discussed in the CCMP clearly dictates other options must be now be considered.



1. Introduction

As the urgency of mitigating and adapting to climate change mounts, the Queensland Government has launched, or plans to launch, a number of strategies, policies and plans. Recent examples are ClimateQ strategy, a new coastal management plan, the *Geothermal Energy Bill 2009* and renewable energy targets of 20% by 2020. One plan targeted at the SEQ region, and relevant to defined sectors, is the Draft South East Queensland Climate Change Management Plan (SEQ CCMP).

1.1 Statement of authorisation

The Queensland Government has sought responses on the Draft SEQ CCMP. This is a submission from the Environment Institute of Australia and New Zealand, South East Queensland Division (EIANZ-SEQ).

1.2 Background to the submission

EIANZ-SEQ is a peak professional body seeking *a sustainable environment achieved through excellence in environmental practice*. This submission has been prepared by a team of environmental practitioners, passionate about climate change and keen to formulate a response that is appropriate to EIANZ's vision.

The submission team are leaders in the environmental field and they, like the broad SEQ community, will inherit the successes, and failures, of the CCMP's implementation. The team identified key points that arose from those actions within the Draft SEQ CCMP that were measurable against EIANZ standards.

EIANZ-SEQ congratulates the Queensland Department of Infrastructure and Planning (DIP) for consulting and requesting comment on the Draft SEQ CCMP.

1.3 Submission objectives

The Queensland Government has sought comment using a Response Form that seeks to:

- ▶ Prioritise draft actions;
- ▶ Recommend additional planning actions; and
- ▶ Provide general comments.

1.4 Scope and limitations

EIANZ-SEQ has prepared this submission rather than complete the Response Form and has focussed on the second and third objectives.

On the first objective, the EIANZ-SEQ found the actions were not sufficiently clear to make an informed prioritisation (Section 2). It has questioned some existing actions and placed those comments in the third objective.



The timeframe to make a reasoned submission had originally been restricted but was then extended. The final briefings, which were held at The Chifley at Lennon's (21st August 2009), allowed EIANZ-SEQ three weeks to coordinate a response relying on voluntary time donated by active professionals. The extension by a month was appreciated.

Additionally, the lack of both specificity and focus of the SEQ CCMP recommendations and action statements, plus reliance upon connections to other government planning documents has made background research demanding. DIP's help in a meeting and provision of reference documents was also appreciated.

1.5 Methodology

To render this response, EIANZ-SEQ has:

- ▶ Recruited and formed a team as part of its Policy and Practice portfolio;
- ▶ Attended the briefing;
- ▶ Held meetings to address scope and content;
- ▶ Prepared a Draft submission;
- ▶ Discussed key points raised with representatives of the DIP;
- ▶ Revised, edited and prioritised the submission; and
- ▶ Finalised the submission.

EIANZ contributors to the submission were drawn from a broad spectrum of skills covering relevant aspects of the planning process, environmental management, community resource management and environmental engineering. These professionals work in government, private industry and tertiary institutions.

EIANZ-SEQ is prepared to discuss this submission further. Enquires should be directed to the submission facilitator Simon Cavendish or via the general mailing address:

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1.6 Disclaimer

EIANZ-SEQ has prepared this submission with the usual care and thoroughness of the professional association for the sole use of DIP.



The recommendations identified in this submission are based on generally recommended standards and practices current at the time of its preparation. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The methodology and sources of information used by EIANZ-SEQ are outlined in this report. EIANZ-SEQ has made no independent verification of this information beyond the agreed scope of works and EIANZ-SEQ assumes no responsibility for omissions or inaccuracies.



2. Discussion

This submission consists of comments, issues, opportunities and recommendations. Where possible, EIANZ has used references in SEQ CCMP and provided an explanation for the rationale of recommendations.

2.1 Draft action priorities

The request to prioritise actions was based on the assumption that the existing 32 actions, identified in the Draft SEQ CCMP, were associated with the SEQ Regional Plan (DIP, 2009).

EIANZ-SEQ aimed to identify actions that were Specific, Measurable, Achievable, Realistic and Prioritised / Time for Delivery (SMART). In addition, EIANZ-SEQ reviewed the actions to assess whether they had effectively identified nominated lead agencies and partners.

Many actions were not specific or measurable and, therefore, were more challenging to identify their achievability.

In the briefing held by the submission committee, many of the questions raised were similar in content and recognised the requirement of linking emissions targets.

A gap analysis was undertaken to identify the linkages between the SEQ CCMP and the SEQ Regional Plan.

Clarification on specific actions is addressed in Section 2.2.

2.2 Actions and recommendations for action

2.2.1 General

Research into developing tools to measure marginal cost curves for adaptation (such as those available for mitigation) should be encouraged.

Program N (DIP, 2009) identifies the need to “reinforce and enhance government applications of research knowledge about climate change adaptation in SEQ”. With regard to Program N, a framework for Local Government Authorities (LGAs), which would assist them to identify which climate change strategies have a high adaptation value, would provide a value added service for climate change adaptation planning for these important community representative bodies.

The SEQ CCMP should encourage LGAs to consider a range of adaptation options and progress implementation of more than one strategy. This would avoid anticipation of results and reduce the risk of failure from reliance upon one strategic approach. This strategic approach would also increase the resilience of the socio-ecological system (SES).



Future adaptation strategies should consider resilience assessments when assessing the adaptation value of an environmental aspect (See Resilience Alliance - www.resalliance.org/1.php).

The SEQ CCMP provides a greater focus on adaptive capacity and adaptation responses and is very limited in its coverage of the SEQ Infrastructure Plan and Program's (SEQIPP) role in climate change in terms of:

- ▶ Assessing and managing its own carbon footprint;
- ▶ The degree of commitment it contains to long-term carbon emissions OR to long term carbon reductions by a range of sectors; and
- ▶ Its role in ensuring essential infrastructure is provided or protected in face of climate change impacts.

These points illustrate the importance of climate change, the challenge of climate change adaptation and the challenge of meeting reduced energy goals.

2.3 Specific issues and comments

2.3.1 Infrastructure planning

Infrastructure planning is a significant part of SEQ Regional Plan and is identified as significant by the SEQ IPP 2009-2026 (DIP, 2009b). The SEQ IPP outlines the government's infrastructure priorities for the SEQ region to support the SEQ Regional Plan. It represents a long-term commitment to infrastructure delivery in SEQ.

Early economic and financial models for SEQ IPP did not incorporate climate change mitigation or adaptation principles that now have subsequently influenced sections of the SEQ Regional Plan and, consequently, the SEQ CCMP.

The SEQ CCMP illustrates only a select range of these infrastructure priorities, predominantly in Section 5.2.1 (Transport and Settlement Patterns) and Section 5.2.2 (Energy Efficiency).

Those sectors that lack infrastructure representation include:

- ▶ Industry;
- ▶ Commerce; and
- ▶ Services (water, energy, communications).

In order to further develop climate change adaptation practices within the infrastructure sector, climate change vulnerability assessments should be integrated into planning of new developments and be accompanied by project specific risk assessments. For example, these assessments might range in scale from stormwater drainage to concrete curing and longevity of structures (such as roads, power grids and buildings).



Under ISO AS/NZS 14064-2006 Greenhouse Gas (GHG) accounting and verification, Scope 1 and 2 emissions that are generated from, along with the energy consumed by, major infrastructure developers and their associated supply chains. These matters should be integrated into the plan until such a time that the Carbon Pollution Reduction Scheme (CPRS) can be fully implemented. Presently it appears that carbon pricing will not be passed on until carbon permitting becomes part of normal business, which will take a number of years to be fully operational.

Scope 3 emissions generated by infrastructure users over the lifetime of that infrastructure will dwarf Scope 1 and 2 emissions. SEQ CCMP and SEQ IPP need to exercise control over these emissions in transport decisions, urban form and housing development, for example.

AGIC, like the Australian Green Building Council, has the potential to provide a rating scheme (e.g. Green Star) for infrastructure design and construction. However, AGIC is still at an early development stage and, at present, does not consider infrastructure planning (Scope 3).

Institutional agreements between the private and public sectors have the potential to create opportunities to change; for example, infrastructure development programs based on long term Public Private Partnerships. This could result in contracts that integrate initiatives from SEQ CCMP and from the Office of Clean Energy. Likewise, the converse can also happen.

Informing SEQ CCMP stakeholders will require clear messages thus lessons learned from other infrastructure projects (e.g. Airport Link) can be re-defined in a future context (as we understand it) under SEQ CCMP implementation in perhaps 2020 and contrasted with our present approaches to planning these items.

The intent of the SEQ CCMP is to suggest a Plan as a long term emergency response to the complexities of climate change. In its present form, the Plan has limited mandating of requirements to achieve greatest carbon reductions through land use planning and infrastructure provision (Crawford and French, 2008); it also has limited coverage of institutional support for rapid uptake of research results as the SEQCARI (CSIRO, 2009) information becomes available.

2.3.2 Energy efficiency¹

Jones, *et al*, (2007) mandate increased energy efficiency as a way of reducing energy consumption associated with new developments. Energy efficiency could also be improved by ensuring Clean Energy Plans are effective and implemented requiring developers meet energy efficiency guidelines. A scheme such as this would set precedence for other States, giving them a workable model to replicate and encourage interstate cooperation. This would go a considerable way towards meeting clean energy goals by 2020.

¹ CCMP section 5.2.2



Targets should be determined with incentives in mind; for example, providing accreditation for compliance with recommended minimum standards (Hussen, 2004). In essence

- ▶ Develop clear targets and effective strategies to achieve them;
- ▶ Use incentives / disincentives to encourage compliance (e.g. permitting and taxation measures);
- ▶ Network with stakeholders to encourage adoption of best practice approaches to energy efficiency, (c.f. the EPA sustainable industry programs);
- ▶ Recognise on-site energy generation is important; but clear incentives are required to make developers and the community aware of opportunities such as longer term contract feed-in tariffs to encourage private small-scale energy development;
- ▶ Mandate as part of new developments waste emissions criteria to assist and encourage the development of renewable energy usage. The technological knowledge already exists (Faaij, 2004; Perry, *et al*, 2008);
- ▶ Declare and phase in expanded criteria recyclable / reusable wastes in order to reduce pressure on existing and future landfills (Lou and Nair, 2008). This has not been discussed within the Draft SEQ CCMP and will require increased consumer education to the household level to meet government targets. Experience gained in effective water conservation programs provides a model; and
- ▶ Provide Local government with assistance in order to achieve successful implementation of objectives and targets such as separate collection of green waste would provide a resource for both renewable energy and nutrient recycling and allow the remaining general waste to be charged on a weight basis.

2.3.3 Risk projection

Currently a declared consensus on climatic change and sea level rise is still struggling for traction against vested interests and some media sections. Better data need to be made widely available through trusted spokespersons with similar advice on projections of flood risk, storm surge and temperature increases.

This endorsement needs clear and bipartisan support at State level for the region and local government districts. This is to short cut further delays by spurious discussion as to whether these measures are needed. It would support LGAs in their assessments of planning requests and Development Approval applications.

A model to ensure future developments are climate resilient should be developed and include projections of rainfall intensity, severe storm events, temperature fluctuations and intensity of natural disasters. Details of the anticipated frequency and severity of these events should be incorporated into this model and provide constraints maps for LGAs and developers alike.



The SEQ CCMP should clearly illustrate emission projections associated with the predicted population growth. These emissions may be presented in scenarios then present management measures through the SEQ CCMP as a means of curbing future emissions to achieve carbon footprint goals.

Several models to illustrate these scenarios (e.g. the McKinsey GHG Abatement curve (www.mckinsey.com)) are readily available.

2.3.4 Policy coherence

The Draft SEQ CCMP should support opportunities for approvals for renewable energy generating plants or mandated energy targets for development. The present lack of policy coherence and strategic direction is evident at a range of levels. Suggestions for action are listed below:

- ▶ A policy fundamental is whether the SEQ CCMP should be constrained to planning and development control matters; or whether it should deal with broader climate change related matters in the Region. Stakeholders need to be able to make their own interpretations and develop realistic expectations plus weigh up criticism.
- ▶ Currently equal weight is given in the draft SEQ CCMP to reducing regional GHG emissions and climate change. These are separate albeit linked issues with the latter a local effect of the former; a global effort to address climate change through GHG emission controls. Adaptation to change is a regionally higher relative priority.
- ▶ Refinement of how the climate change initiatives and commitments in the Regional Plan are dealt with in the SEQ CCMP is required.
- ▶ The relationship with other Queensland Government planning related climate change initiatives has not been articulated. A diagrammatic representation of relationships between the different departments and the overall Queensland Government climate change initiatives is needed. The present situation suggests the Queensland Government lacks a clear plan or strategy for climate change as it relates to planning and development control in an un-coordinated and piecemeal manner.
- ▶ Resolution of how GHG emissions reduction and climate change adaptation for existing development needs to occur.

2.3.5 Bio-sequestration²

Consideration should be given to a variety of bio-sequestration programs, which could for example include geosequestration.

Draft Actions 15 and 16 should be developed to include mapping areas suitable for forms of bio-sequestration. In addition, an assessment of opportunities in carbon capture and storage within SEQ region should be undertaken.

² CCMP section 5.2.4



2.4 Other Comments

2.4.1 Gap Analysis

EIANZ-SEQ has identified five policy actions that were not given reference in the Draft SEQ CCMP. These deficiencies are listed in the order of address in the SEQ Regional Plan.

- ▶ 2.1 Biodiversity Principle: Protect, manage and enhance the region's biodiversity values and associated ecosystem services and maximise the resilience of ecosystems to the impacts of climate change;
- ▶ Draft Action 15 - Identify and map areas suitable for carbon sequestration through vegetation retention or enhancement. Planning for bio-sequestration should fit with other natural resource management outcomes, including biodiversity protection, healthy waterways and restoration of ecosystems (Jones, *et al*, 2007). Cost-effective outcomes increase with increasing diversity of uses (Lubowski, *et al*, 2006). Specific targets and state funding commitment should be included;
- ▶ Draft Action 16 - Increase carbon sequestration through vegetation retention or enhancement could be considered through implementation of offset policies for vegetation, biodiversity and koala habitat. Specific targets and state funding commitment should be included;
- ▶ Draft Action 21 - Update the current guideline, mitigating the adverse impacts of storm tide inundation to incorporate current climate change science. This will require mapping of areas where coastal hazard risks may exist reflecting potential impacts on human health, agriculture, transport, essential infrastructure, buildings and biodiversity; and
- ▶ Draft Action 29 - Improve understanding of the vulnerability of ecosystems to the impact of climate change in SEQ. Research on current and future vulnerability is needed.

Other comments are:

- ▶ For Section 10.5.5 - Energy Policies: adoption of the following is recommended to assist in reducing GHG emissions from electricity use:
 - Renewable energy target of 20% by 2020;
 - Cut carbon footprint by 33% by 2020; and
 - Plan and design new communities with improved energy efficiency through passive and active measures (solar orientation, shading of walls, protecting solar access for hot water systems and photovoltaic panels, community scale renewable energy generation);



- ▶ For Section 10.7.2 - Waste Policies: undertake a feasibility analysis and to encourage pilot plants and larger scale diversion of green and organic waste to bioreactors for capture and local use of landfill gas for local power generation. This complements Draft Action 17: a strategy to support waste-to-energy projects. This also reduces methane emissions from landfill and sewage treatment;
- ▶ Support for Section 12.2 for improved access to sustainable travel choices for all members of the community, plus manage congestion, reduce car dependency and reduce GHG emissions;
- ▶ Draft Action 1: complete the Integrated Regional Transport Plan (IRTP) and integrate this with the SEQ Regional Plan. The intent of encouraging travel by public transport is commended. Further in Section 12.3 use this approach to provide community benefits, reduce GHG emissions and vulnerability to oil depletion;
- ▶ Draft Action 3: complete guidelines for transit oriented development (TOD) precincts by adopting a compact urban form, reducing the need for travel and private vehicle use and concentrating population and employment close to public transport. The transit oriented development (TOD) guidelines provide advice on designing and creating transit oriented communities;
- ▶ Through Rural Planning Policy 5.2.4, minimise climate change impacts and rising energy costs on regional food production by encouraging compatible agriculture near urban areas and associated market outlets. The only reference to food in the Draft SEQ CCMP was that we live in a Region where food is grown close to markets with water efficient and energy efficient practices;
- ▶ Areas to be considered for inclusion in the Urban Footprint should exclude areas with an unacceptable risk of natural hazards including predicted impacts of climate change;
- ▶ Energy Programs require protection of optimal locations for low emission, renewable energy resources, recognising needs and constraints of market mechanisms, infrastructure and growth; and
- ▶ Overland flow and flood management Policies require avoidance of areas of unacceptable flood risk increased by climate change, and areas where development may increase flood risk elsewhere. This includes areas with increased land instability as a result of increased rainfall intensity (slope failure) and flooding.

2.4.2 Population

The Draft SEQ CCMP suggests reduced GHG emissions and increased ecological resilience as a direct result of the Plan but fails to address increased emissions and impacts associated with large increases in population.

The Plan should provide clear definitions of climate change mitigation measures and how those measures will be implemented. The dramatic population growth in SEQ should be identified as one of the most significant impacts facing the region.



Related issues are:

- ▶ Increased energy demand and new sources, e.g. solar power or wind farms;
- ▶ Increased water demand and new sources, e.g. desalination plants;
- ▶ Increased impacts on the transportation networks;
- ▶ Increased energy intensity of the economy, due to the high and largely unavoidable energy intensity of the construction sector;
- ▶ Increased distances from agricultural centres, placing a greater carbon footprint on locally grown food stocks;
- ▶ Population growth predictions for SEQ are based on a rate of 2.5% per year, which will require a doubling of infrastructure provision within 20 years if current usage patterns persist. Reductions in population growth rate will reduce total future emissions: population and per capita emissions (DIP, 2009b); and
- ▶ Draft Action 19 states that SEQ's climate change impacts are a product of its per capita impacts and its population. Climate change indicators in the SEQ State of the Region Report needs to detail population growth increases and the corresponding per capita reductions needed to ensure regional emissions are minimised or held steady.

2.4.3 Roadmap and timing of plans, policies, strategies etc.

Legislating Climate Change

EIANZ-SEQ recommends that mitigation and climate change adaptation strategies are developed throughout the Plan and accounted for in legislation to enforce new standards for developers

To be effective, current management plans need to convert to regulations rather than guidelines to meet goals. This sets a legal obligation to provide sustainable thinking practices and climate change mitigation measures into development Environmental Management Plans (EMP).

2.4.4 Insurance

The insurance industry will determine its own response to climate change and is not discussed in this submission. Social equity issues arise in this area and require address separately.



2.4.5 Transport and settlement patterns³

Increase adaptive capacity and promote climate resilient developments

EIANZ-SEQ strongly supports actions that promote increasing adaptive capacity of human settlements and that provide guidelines to help them cope with natural hazards. This is reflected in Draft Actions 25, 26 and 28 and to plan responses that reduce risk at the community level.

2.4.6 Mapping risks for communities⁴

Mapping risks and identifying climate change vulnerable areas in Draft action 24 is currently only focussing on coastal hazards and needs to highlight other risk areas.

CSIRO has developed such mapping tools (used in mapping greater Sydney's vulnerability) (CSIRO, 2008). This approach is highly recommended as it will assist transport infrastructure planning among other long term community infrastructure planning programs.

2.4.7 Decentralisation and new communities

Green-field developments are an important planning issue that requires address of decentralisation to reduce travel distance/time and emissions (Crawford and French, 2008). Bring people and public transport provision together through improved community design⁵. This can be by improving access to and capacity of public transport and making private vehicle use less attractive. Encourage flexible working hours and possible work from home / telecommuting schemes to reduce usage peaks. Ideally this would eventually become the decentralisation of employment through development of employment hubs integrated into residential areas.

2.4.8 Energy

In order to accomplish Program C, mandatory targets for energy efficiency need to be declared and adopted for the SEQ region.

2.4.9 High Density Housing⁶

While high density housing can overcome some of the problems of absorbing increased populations by increasing infill density (Ewing, *et al*, 2008), a number of changes are needed to provide a more sustainable solution to planned population expansion in SEQ.

³ CCMP section 5.2.1

⁴ CCMP sections 5.3.1 and 5.3.2

⁵ CCMP sections 5.2.1 and 5.2.6

⁶ CCMP section 5.2.1



These include the incorporation into High Density Housing areas of:

- ▶ Centralised recycling facilities (paper, cardboard, glass, plastics, aluminium);
- ▶ Energy efficient light bulbs and appliances in all rental properties;
- ▶ Rainwater tanks for maintaining communal gardens;
- ▶ Sustainability regulations into standard Terms and Conditions of a lease;
- ▶ Individual water meters per unit of dwelling;
- ▶ Development of these communities near to public transport routes, or within the immediate city centre suburbs, reducing use for personal cars; and
- ▶ Minimise car parking spaces through communal pooling of car space areas.

2.4.10 Renewable energy⁷

Program E or G should be amended with streamlined approvals for renewable energy (currently part of the government's renewable energy plan) and be significantly considered under the SEQ CCMP.

EIANZ-SEQ supports planning, assessment and performance guidelines for on-site energy generation, as detailed in Draft action 14.

2.4.11 Green Jobs / Renewable Energy⁸

The development of green jobs is an approach that the SEQ CCMP should actively encourage by identifying opportunities. Active development of green jobs can offset job losses from traditional GHG intensive operations (Lewis and Wisser, 2007). This will require leadership through positive policies (e.g. purchasing decisions) to support growth.

2.4.12 Biodiversity⁹

Biodiversity conservation is a difficult issue as sequential loss through multiple small changes poses challenges to maintaining future viability (Peterson, *et al*, 2007). Actions 29 and 30 of the SEQ CCMP play an important role in recognising the importance of vulnerability assessment of natural ecosystems and the requirement to increase their ecological resilience.

⁷ CCMP section 5.2.3

⁸ CCMP section 5.2.3

⁹ CCMP sections 5.2.4 and 5.3.3



The SEQ CCMP should mobilise information from a wide range of research efforts on biodiversity conservation being undertaken in SEQ (e.g. through Griffith University) to better inform the community and improve revisions to the plan. Other sources are the Rainforest Cooperative Research Centre determining the importance of forests as carbon sinks (Jones, *et al*, 2007) (www.jcu.edu.au/rainforest/research.htm). It would also be valuable to improve the dialogue between government departments, research institutions and local catchment groups. Funding arrangements and community education can be facilitated through a range of such contributing stakeholders.

2.4.13 Education¹⁰

Community awareness and Behaviour

Engaging the community through education programs will be key to energy conservation at the personal level (savings to the household) and that of the community (GHG emissions minimisation to contribute to minimising climate change). The water conservation program illustrates the high effectiveness of these approaches. Key success indicators were:

- ▶ Community acceptance of the need for water conservation as had good information; and
- ▶ Regular release of quality data (at least weekly or more often when rain occurred) provided by the authorities, with minimal spin giving concise information that the community wanted to hear.

This approach would work for energy consumption by daily release of power consumption by suburb the next day and keep releasing tips on power conservation.

Education and community awareness is also a way to build ownership towards the climate change effects of goods and services (e.g. building materials, public infrastructure, supporting leisure activities) with their embedded and running energy costs. Our demands create some of these collective GHG related outputs that contribute to climate change.

Awareness should be encouraged in understanding the embedded energy in all we do (housing, cars, aircraft, shopping mall operations) over their life spans. This could be achieved by following the example of water wise appliances ratings, not just for operation energy, but also, its overall cost plus recycling energy savings compared starting from raw materials.

An effective approach can be to provide practical small incremental increases in understanding to the community through media. Keep the information flow rate low by 'drip feeding' it constantly and minimising the dramatic science. In addition to this, detailing small energy saving techniques for households to implement can be done via an advertising campaign.

¹⁰ CCMP section 5.2.6



Educating Future Generations

Children are the adults of the future and have a great capacity to integrate new skills into the home environment through telling their family about recycling, using energy efficient appliances, building in less flood prone zones, using locally produced foods and switching off the lights when there is no-one in the room. The education of children has a proven history of success through perseverance (e.g. anti-litter campaigns and “slip slop slap” against skin cancer).

These inputs complement community education and engagement of adults from all backgrounds. Access through community newspapers (c.f. mainstream news), local forums and education schemes have the ability to improve understanding and interest in a wide range of people, particularly if there is a desire to understand concerns being discussed within the local community.

With climate predictions based upon implementation dates of 2020 and 2050, children of today will include the environmental consultants of the future dealing with the effects of climate change.

2.4.14 Skills of professionals and practitioners

Nowhere in the SEQ CCMP are the skills of climate change professionals or practitioners addressed. Practitioners may be anyone in society. As climate change influences our economic, social and environmental fabric, skills become more needed everywhere.

EIANZ has 15 years experience of the changing face of the professional and its needs. An EIANZ survey conducted in 2007 showed that its practitioners feel ill-equipped to deal with climate change (see ‘Blueprint’ in www.eianz.org/publications/other-publications). An ongoing federally funded program of training needs analysis conducted by EIANZ continues to confirm the same (EIANZ, 2009). Practitioners and professionals, like all those going through change, need help.

Skills training cuts across all actions and, for professionals, is most closely aligned to Draft Actions 18 and 32. Both actions are focused on the community and not necessarily the stakeholders in between, e.g. planners, engineers, policy officers, regulators, auditors, lawyers, accountants, business managers, journalists, teachers and consultants. It is unclear where skills are in the Appendix 1 initiatives, e.g. Climate Q’s Climate Smart Business may offer opportunities in mitigation; and NGER is addressing auditors.

What is becoming clear is the urgency to have competency available to defend against legal challenge and be confident that the right decisions are being made in a time of rapid change.

To address this situation, EIANZ has commenced a staged training program for environmental practitioners (STEP) program. It is still at an early stage but increased proficiencies are evident and have been tested in SEQ. This STEP and Climate Change training programs is considered to be a prospective path for supporting the SEQ CCMP.



Climate Change Skills Training for practitioners should be developed to allow those practicing in the field to network with industry partners and develop a link between training modules. Ultimately, this training program would develop climate change proficiencies and competencies required for professionals.

EIANZ-SEQ has the capability to prepare and develop climate change training and assessment programs. Consideration should be made to further develop the relationship with EIANZ-SEQ to promote these necessary skills and progress a training program alliance with government and tertiary training institutions.

2.4.15 Regarding community preparedness to natural hazards¹¹

The SEQ CCMP should encourage LGAs to increase community preparedness for natural disasters operating at the Local Government, local community and household levels.

Natural hazards that are likely to benefit from this approach include bushfires and cyclones through:

- ▶ Defining a role for the broadcast and paper media prior to and during fire and storm events;
- ▶ Fostering a greater understanding of the roles and responsibilities of both fire services and the community in times leading up to and during these events;
- ▶ Informing the community about the importance of control burning and tree lopping;
- ▶ Improving preparedness at the individual and household level; for example, encouraging the preparation of fire evacuation plans and flood survival kits; and
- ▶ Foster greater communication between agencies in order to improve emergency services. For example, information sessions provided by the fire brigade to inform the community of risks and preventive measures.

¹¹ CCMP sections 5.2.6, 5.3.1 and 5.3.5



3. Recommendations

This submission has been prepared by the Environment Institute of Australia and New Zealand, South East Queensland Division for the Draft Climate Change Management Plan for Queensland, as invited by the Queensland Department of Infrastructure and Planning.

The submission team comprised a group of environmental professionals from a varied technical background, in order to provide an objective and results orientated submission, which is achievable and consistent with the EIANZ values of seeking a sustainable environment by excellence in environmental practice.

Recommendations made throughout this submission are summarised in Table 1 below.

Table 1 Summary of recommendations

Recommendation	Description	SEQ CCMP Ref
Group A: Communications		
Recommendation A-1	Promote the rationale for the SEQ CCMP and SEQ CCMP changes to changing climate effects to targeted sectors of the community. Apply lessons learned in encouraging and gaining community support for water management in the recent SEQ drought.	Section 5.2.6
Recommendation A-2	Support professionals, practitioners and skilled communicators to ensure reliable and reputable information is presented to the public on a regular basis, e.g. EIANZ forums	Section 5.2.6
Recommendation A-3	Illustrate pictorially how future infrastructure may appear under SEQ CCMP as compared to now, e.g. an enhanced Air Train versus Airport Link.	Section 5.2.6
Recommendation A-4	Develop a central communication system that integrates relevant information from all government departments to assist in directing behavioural change and building community resilience.	Section 5.2.6



Recommendation	Description	SEQ CCMP Ref
Group B: Targets and actions		
Recommendation B-1	<p>Add targets and performance measures for planning adaptation and mitigation:</p> <ul style="list-style-type: none">▶ Maximum cap for regional emissions / resource consumption;▶ Reductions per capita in key areas; and▶ A corresponding declaration of cap / volume per capita limits for these resources. <p>Models for these issues are emerging (e.g. London’s neutral carbon scheme). Another example includes the healthy waterways “Report Card” targets and performance.</p>	Section 5.2
Recommendation B-2	<p>Use established processes to measure, report and plan to manage targets, e.g. standards such as AS/NZS ISO 14064, AGIC’s rating tools, GRI indicators and legal instruments such as RET, NGER.</p>	Section 5.2
Recommendation B-3	<p>Minimise Greenfield developments and increase densities, without degrading quality of life. Allow Greenfield development if it is:</p> <ul style="list-style-type: none">a) Carbon neutral;b) Can be accommodated without exceeding the carrying capacity of key resources, such as water, public transport, energy and biodiversity resources (maintenance of regional ecological corridors); andc) Limits private car use.	Section 3.1 Tables 4 and 5 Section 3.2 Table 6



<p>Recommendation B-4</p>	<p>Embed Climate Change into SEQ IPP:</p> <ul style="list-style-type: none"> ▶ Mandate targets and tools (as in Recommendations B1 and B2) to: <ul style="list-style-type: none"> – Undertake fully costed GHG and energy monitoring / reductions; and – Climate change vulnerability assessments and adaptation initiatives, e.g. increased flooding; ▶ Use GHG profiling to identify the most carbon-effective urban form, e.g. high-density housing that also incorporates improved energy efficiency to meet targets; and ▶ Seek partnerships to create infrastructure-led development of that urban form. 	<p>Sections 2, 3, 4 and 5</p>
<p>Recommendation B-4</p>	<p>Focus on the rapid development of renewable energy guidelines / appropriate stimulation actions to help manage demand and supply (feed-in tariffs, off-peak discounts, time-of-day based energy costs, water and energy efficient labelling).</p> <p>Improve product information to the community about whole of life energy costs, life span, repairability, recyclability, etc.</p> <p>Encourage “green jobs” that facilitate the transition to a lower carbon economy.</p>	<p>Sections 5.2.1, 5.2.3, 5.2.5 and 5.2.6</p>
<p>Recommendation B-5</p>	<p>Define climate change proficiencies for agreed roles and identify, develop and accredit climate change training and its assessment.</p> <p>Support accreditation, certification and development of climate change practitioner skills (trades, RPL, CPD)</p>	<p>Section 5.3.4 Draft action 31</p>



Recommendation	Description	SEQ CCMP Ref
Group C. Discovery and use of new knowledge		
Recommendation C-1	Develop scenario models for climate related risks to ensure future developments are climate resilient. As reliable new knowledge emerges, update projections, practices and stakeholder's awareness / nimbleness to change.	Section 2.3
Recommendation C-2	Develop mitigation measures and climate change adaptation strategies throughout the SEQ CCMP built upon scenario models and mechanisms for their review and adjustment over time.	Section 2.3 and 2.4
Recommendation C-3	As part of the communications strategy, include mapping as an important communication tool to illustrate new knowledge of areas at risk, with changed vulnerability or with opportunities for renewable energy.	Section 5.3.1, Draft action 24 Section 5.2.3 Draft Action 12
Recommendation C-4	Prepare an inventory and assessment of the SEQIPP's contribution and adaptation to climate change.	Section 5.3.2 Draft action 26

Recommendation	Description	SEQ CCMP Ref
Group D. Maintenance of Biodiversity		
Recommendation D-1	Develop research program(s) to identify long term biodiversity conservation risks and opportunities and their management. Use scenario models, field research and resource mapping to understand changes and to optimise management of biodiversity, e.g. ecosystem migration, biosequestration.	Section 5.3.3 Draft Actions 29 and 30 Section 5.2.4 Draft action 15
Recommendation D-2	Re-evaluate and recognise the benefits of biodiversity to urban development, e.g. Greenfield communities.	Section 5.3.4 Draft action 31



Recommendation	Description	SEQ CCMP Ref
Group E. Institutional arrangements		
Recommendation E-1	<p>Improve coherence and nimbleness of climate change planning decisions:</p> <ul style="list-style-type: none"> ▶ Between government departments / private sector, e.g. Department of Infrastructure in SEQ CCMP; and ▶ In response to rapid change in the Climate and evolution of planning documents, e.g. SEQ CCMP to Q Climate to Coastal Plan. 	Sections 5.2 and 5.3
Recommendation E-2	Ensure local government planning schemes address Climate Change.	Sections 5.2 and 5.3
Recommendation E-3	Declare a set deadline for the preparation of specific management strategies for mitigation and adaptation aspects of the full set of DROs.	Sections 1.4 and 5

Recommendation	Description	SEQ CCMP Ref
Group F. Documentation		
Recommendation F-1	Ensure the 32 draft actions are linked to emissions targets.	SEQ CCMP
Recommendation F-2	Ensure the 32 draft actions are linked to the SMART program.	SEQ CCMP
Recommendation F-3	Ensure gap between SEQ Regional Plan and SEQ CCMP (described in submission Section 2.4.1) is closed.	SEQ CCMP



4. Conclusions

In declaring the SEQ CCMP there are a range of opportunities and constraints that will require address. Recommendations provided above are inputs from the EIANZ panel of experts to hopefully assist in this issue.

A fundamental problem is the acceptance of continued population growth, whilst also attempting to achieve Q2 targets. The State Green Target 1 is to cut Queensland's carbon footprint by one third with reduced car and electricity use.

This target is unlikely to be reached without a major review of the SEQ Regional Infrastructure Plan (2009-2031) to reduce the extent and location of the Region's urban footprint.

The alternative is to restrict the Region's population growth – an aspect that receives no coverage in the Plan, though it is a problem recognised repeatedly in the ClimateQ document.

Climate change has brought into the open the issues of future choices within the context of managed growth. A preferred community direction may be the acceptance that we can no longer base a future on continued population growth, particularly given our vulnerability to climate change impacts and our increased contribution to emissions contributing to climate change.

Preparation of adaptation strategies will require numerous avenues of investigation. Many of these issues have very brief coverage in the Plan suggesting the breadth of complexity that will be encountered may have been underestimated. This has created opportunities to build stronger partnerships with research institutions (universities and CRCs) as part of change management to these issues.

As mentioned in context, courage, political will and bipartisan support are required for a successful implementation of hard decisions that will be required. We are facing times of accelerated natural change outside the community experience that will require a 'whole-of-government' approach to this Plan as the Region's Management Plan. How State departments implement this management plan and how actively they embrace the degree of change and urban retrofit desired are part of this challenge.



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