

Population, sustainability, climate change, water and the future of our cities



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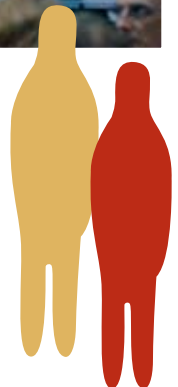
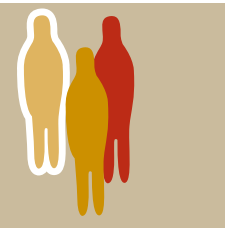
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OVERVIEW

Australia faces an unprecedented challenge from climate change coupled with our ever-expanding ecological footprint. We risk losing our natural heritage, our water resources, and the basis for our urban lifestyles and future prosperity. We have a brief opportunity to act now to safeguard and shape our future.

The 2020 Summit participants for the Population, Sustainability, Climate Change, Water and the Future of Our Cities stream (the Sustainability stream) were asked to consider the challenges and opportunities for a sustainable future for Australia. This is the final report of that stream.

The report brings together the full set of ideas of this stream and documents the detailed discussion which formed the basis of the initial report presented at the conclusion of the summit.

The initial report was the culmination of significant debate and discussion and represented the majority views of the group. It is presented in this final report together with greater detail about the ambitions, ideas and themes that were discussed and synthesised into the initial report.

Stream process and structure

In developing its report for consideration by the Australian Government the stream adopted the following process.

On day one, outputs focused on collecting and distilling views on ambitions for 2020, top ideas and priority themes, including views from the Youth Summit. The 100 participants of the Sustainability stream were then divided into four subject discussion groups. These groups were:

- climate change
- water
- sustainability
- population and cities.

The climate change group focused more on emissions reduction, innovation and technology and markets while the sustainability group focused on the issues of adaptation, biodiversity and broader environmental sustainability. It was recognised that there was some significant overlap between these groups and it is important to consider mitigation and adaptation issues together.

Each group was led by a team leader who was one of the participants with expertise in the subject area. The groups were supported by facilitators and note takers.

The process of developing the initial report was as follows. Groups were first asked to identify their top ambitions for their subject area, e.g. water or climate change. Specifically, they were asked:

- what would Australia look like in 2020 in respect of your area?
- what are the key areas for change to achieve that ambition?

Groups were asked to prioritise their top three ambitions through a process of discussion and agreement.



Individuals were then asked to identify their top three ideas to achieve their ambitions and the groups were asked to collectively agree on five high impact ideas and potentially a “breakthrough” idea. The criteria for a high impact idea were magnitude of change, speed, achievability and cost. Groups were asked to ensure that one high impact idea was a “no cost” idea.

Through a process of debate and discussion each group agreed their top five high impact ideas and recorded disagreements and additional ideas. These ideas were then presented to the full stream of 100 participants in the afternoon which formed the basis of the first draft of the summary report.

On day two, the draft report was considered by the 100 stream participants. Three broad groups discussed the document and suggested changes to the original draft. The majority views of these groups were then synthesised into the initial report.

STREAM SUMMARY: THE INITIAL REPORT

Ambitions

Our aspiration is that by 2020 Australia is the world’s leading green and sustainable economy. That we will set time bound targets and be on track to dramatically decrease our ecological footprint while continuing to grow our economy and improve our quality of life. Through our creativity and skills, we will have harnessed the full potential of our natural assets and human resources to turn the challenge of climate change to our advantage.

By 2020 Australia will be making a major contribution to a comprehensive global response to climate change, including working with our partners on clean energy. Australia will have dramatically reduced our emissions, and communities, regions and business will be actively assisted to adopt the unavoidable consequences of climate change.

Environmental considerations will be fully integrated into economic decision making in Australia, at the household, business and government levels. We will have resilient and innovative water systems that reduce our dependency on climate-sensitive water resources in our towns and cities.

A robust emissions trading system and a suite of complementary measures will be driving a low carbon revolution with government taking the lead working in partnership with business and the community. Climate and sustainability policy will also incorporate the needs of disadvantaged and low-income Australians.

A new dialogue will have been established with our Indigenous peoples on our response to climate change, water and sustainability challenges.

Australia’s globally outstanding ecosystems and species are managed to reduce threats and build resilience to promote adaptation to climate change.

By 2020 the health of Australia’s ecological systems will be improved. The health of our river and groundwater systems will be managed to achieve ecological sustainability, supporting food and fibre production and resilient communities. Australia will also have become a global leader in tropical water system conservation and sustainability.

Themes

An integrated, whole-of-government approach underpinned by clear targets and measurement with independent reporting is fundamental.

Strong national leadership and international engagement was identified as a priority theme. Capacity building and the importance of changing incentives such as price were also widely considered to be central to the discussion.

Stakeholder engagement, including with regional Australians, capacity building and education are needed to support the significant behavioural change required to implement these policies. Indigenous people must also be involved in policy development and implementation.

The urgent need to complete implementation of long-standing commitments to water reform was also identified.

Ideas

We could adopt a National Sustainability, Population and Climate Change Agenda and develop robust institutions to support it. Australia would have a whole-of-government approach to climate change and sustainability policy, encompassing government expenditure, taxation, regulation and investment.

As part of this agenda we could include an audit function to report on governments' performance against these climate change and sustainability objectives.

We could implement a set of national environmental accounts, including carbon and water accounts, to inform government, business and community decision-making. These could be linked with the current national economic accounts. We will explicitly link the environment to productivity and innovation to underpin our future competitiveness.

Through a national Sustainable Cities Program the federal government could lead a nationally consistent approach to urban and regional planning which drives water efficiency and reductions in emissions. This could be supported by the implementation of tax and other policies that encourage the use of public transport relative to other modes of transport.

A national Indigenous Knowledge Centre could be established and maintained with Indigenous people. This centre would examine multidisciplinary research and program delivery pertaining to climate change, sustainability and water.

Australia could have a population policy and immigration program that works truly in the national interest and that is a model for the world.

Further investment could be directed into research, development and deployment to enable a low emissions energy revolution.

We could transform the ecological footprint of the built environment by taking the lead on national planning, building and product standards to minimise waste and reduce water and energy consumption in our homes and in our neighbourhoods. Early action could include support for energy efficiency measures in low-income households and consideration of housing affordability implications. A particular initiative at this point could be to require carbon neutrality for all new buildings constructed beyond 2020.



Before 2020 all Australians could have the tools to enable them to measure and manage their personal carbon footprint. This could include access to smart meters for energy and water consumption.

We could expand the use of a wider range of market mechanisms to acquire water entitlements from over-allocated systems with a view to encouraging sustainable water use and assisting communities to adjust.

The urgency of responding to climate change makes it imperative that the emissions trading scheme and the ensuing long-run carbon price drive a transition to clean energy technologies.

Areas for further research

It was agreed that comprehensive improvements in environmental data and statistics were necessary to enable better management.

Disagreements

The points of contention during the discussion were the respective merits of clean coal versus renewable energy sources, population restrictions versus reductions in per capita footprint, the transfer of all Commonwealth funding to public transport (rather than roads), and GM crops.

A substantial number of the group felt strongly that no new coal-fired power stations should be built in Australia until carbon capture and sequestration is commercially available, proven, safe and efficient. However, there was no consensus.

Summary of submissions to 2020 Summit Secretariat

Sustainability and climate change were two of the most topical issues addressed in submissions. There was considerable support for an increasingly market-based approach to environmental issues, with water and carbon pricing two of the most intensely debated issues. Several demand-side initiatives to moderate Australia's consumption of high-carbon products were proposed, including product labelling and taxation measures designed to promote low-carbon consumer choices and lifestyle changes. Such specific ideas were proposed as electronic traffic congestion pricing (with positive credits potentially available for public transport usage), while bigger picture concepts such as engaging in a global carbon trading market were also vigorously advocated.

From an environmental leadership perspective, an Asia-Pacific regional authority was proposed to research and promote renewable energy technologies and policies. Domestically, a set of national environmental accounts was suggested to regularly report on the condition of our natural capital. There was a call for increased disclosure of the environmental performance of large enterprises, possibly under a set of formalised accounting standards, while increased scrutiny of government environmental practices (use of energy from renewable sources, emission levels) was a further idea.

Large-scale consumer education campaigns were suggested to raise awareness of the urgency of sustainability issues. A raft of broader ideas were also put forward for this stream, including overhauling immigration policy in the context of increasing domestic demand for skilled labour, and the reinvention of our architectural and building design industries into a visionary, world-leading institution in sustainable practices.

CLIMATE CHANGE

Ambitions

- By 2020 Australians are proud to be enabling effective global climate action. Australia is a global model for sustainable development.
- By 2020 we have harnessed our creativity and skills to develop new opportunities and natural advantages for the future.
- Acting together, by 2020 we have dramatically decreased our personal carbon footprint and improved the quality of life for all whilst understanding our relative global position.

IDEAS

- 3.1 A National Climate Strategy for transforming Australia to a green economy that could be exported globally, including:
 - 3.1.1 an energy efficiency strategy for every sector (leveraging our natural advantages—at low cost)
 - 3.1.2 establishment of institutions for the long-term management and oversight of carbon risk—a single, independent clean energy authority, in the manner of the Reserve Bank of Australia—see the later discussion about a proposed Clean Energy Authority
 - 3.1.3 linking with regional partners.
- 3.2 A national clean energy portfolio of several flagship projects—in ‘natural advantage’ categories such as agriculture, clean coal and renewable sources of energy.
- 3.3 An independent Australian Climate Information Authority to disseminate evidence-based information rather than advocacy—see the later discussion about this proposed authority.
- 3.4 A world-class climate change education program (leveraging a natural advantage) that includes developing applied science capacity, green economy skills and training, a clean energy corps, and ‘eco-education’ embedded in school curricula.
- 3.5 Support for Youth Summit views to encourage greater use of public transport.

Disagreements

- The role of targets such as renewable energy targets and energy efficiency targets: we need to make sure these complement the emissions trading scheme.
- How we refer to ‘decreasing our carbon footprint’: what if Australia produces power and exports to the world in a more sustainable manner? What risk do we run in taking the ‘hit’ as far as per capita emissions are concerned?
- Terms such as ‘clean technology’ and ‘clean energy’: clean coal and nuclear energy are not the same as renewable sources of energy.
- The use of nuclear energy as a renewable source or clean fuel: there was strong opposition to nuclear energy being considered a clean energy option. It was agreed that criteria including public acceptability were required in the selection of clean energy options.



WATER

Ambitions

- By 2020 Australia will be a global leader in tropical water system conservation and sustainable use.
- By 2020 the environmental health of all river and groundwater systems will be restored to achieve environmental flows, sustainable food and fibre production, and resilient communities.
- By 2020 we have a dynamic, climate-resilient and innovative water system.
- By 2010 (as a stage towards 2020) we can report on the status, performance and outlook for water resources in a way that is useful to policy makers and markets and is accessible to the general public.

IDEAS

- 3.6 Manage tropical water system conservation and sustainable use by:
- 3.6.1 developing a management plan for Northern Australia within three years, with full implementation by 2020, to prevent rather than repair environmental damage
 - 3.6.2 shared governance of tropical catchments through cooperation—perhaps through a COAG agreement covering water, sustainability and land management
 - 3.6.3 delivery through the support of, and in partnership with, Indigenous and local communities—including through developing markets for ecosystems services including stewardship payments to Indigenous communities
 - 3.6.4 limiting water system development to achieve healthy rivers whilst achieving the best economic outcomes—for example, water use for mining instead of agriculture
 - 3.6.5 synthesising and understanding the available data to enable better policy making.
- 3.7 Manage all river and groundwater systems by:
- 3.7.1 institutional and market reform based on water systems, not state boundaries, with participatory governance that engages the local community
 - 3.7.2 expanded use of a wider range of market mechanisms (or smarter ways) to acquire over-allocated water—for example, deferred purchase or up-front payment for water entitlements—and enable water to be used for multiple purposes under water plans
 - 3.7.3 determine the process for the community to define the objectives and trade-offs to achieve sustainability, particularly in the context of the uncertainty created by climate change and increased variability
 - 3.7.4 identifying key environmental assets and defining objectives and measurable criteria for system health and water quality
 - 3.7.5 improved scenario planning that takes account of future system changes.
- 3.8 Manage Australia's water system by:
- 3.8.1 facilitating investment in technology, infrastructure and industry skills to achieve greater diversity in supply, including indirect potable, stormwater and low-energy desalination, with carbon-neutral delivery of water in rural and urban areas
 - 3.8.2 institutional and market reform—including proper pricing for water and competitive access for the private sector in delivery and distribution

- 3.8.3 implementing a demand management strategy including standards for water infrastructure, fixtures and appliances
- 3.8.4 increasing the level of water sourced from climate-resilient supply options over time.
- 3.9 Report on Australia's water resources by:
 - 3.9.1 collecting data necessary for developing a biennial Intergovernmental Panel on Climate Change-style report on the status of water systems—for example, by developing a water index similar to the Australian Stock Exchange top 200 index
 - 3.9.2 publicising this information on water status in annual environmental accounts
 - 3.9.3 fostering multi-disciplinary cross-industry training and skills development in the water industry—including hydrology, climatology, ecology and economics.

Disagreements

- The relative financial and energy costs of local treatments and distributed systems (rainwater tanks, and so on) as compared to centralised schemes. Local can be more expensive.
- The importance of water systems remaining energy efficient—including, for example, putting low-flow power plants into the gravity systems.

SUSTAINABILITY

Ambitions

- By 2020 we will have developed a comprehensive vision of a sustainable Australia—and we're living it! A no regrets approach.
- By 2020, we are reducing our impact and moving towards a zero footprint across society (not just carbon) through a mix of design initiatives and offsets.
- By 2020 we have actively built environmental and social resilience through:
 - biodiversity conservation and restoration of landscapes, for example salinity control, improved water management and reforestation
 - community resilience and collaboration—an inclusive approach involving rural, Indigenous and urban communities.

IDEAS

- 3.10 A national sustainability reform agenda resulting in a framework policy (National Sustainability and Climate Change Policy) and a commission (Sustainability Commission) with 'teeth' similar to Australian Competition and Consumer Commission. The process should be similar to the implementation of National Competition Policy.
 - 3.10.1 The aim of regulatory reform is to 'climate-proof' the economy, remove anomalies and inconsistencies in planning, zoning, building codes, inefficient and distorting taxes, subsidies and regulations.



- 3.10.2 The Sustainability Commission would be an independent sustainability institution equivalent to the Reserve Bank, the Australian Stock Exchange, the Productivity Commission or the ACCC, to give effect to the new regulatory environment and provide imperatives to achieve action on sustainability.
- 3.10.3 Provide for a full range of mechanisms to redress market failures, including ensuring that price reflects true social cost, not just private cost.
- 3.11 Internalise the values from society and environment into a comprehensive reformed national accounts system.
 - 3.11.1 Track sustainability performance with something visible that will help people change their behaviour—environmental indicators should have the same status as economic indicators showing trends in the ecological footprint. This is not about inserting environmental factors into economic accounts but substantially re-thinking the role and function of both environmental and economic accounts.
 - 3.11.2 Encourage regular company reporting against sustainability indicators.
 - 3.11.3 Undertake the valuation of environmental and social measures at the same level as economic measures—differentiating between ‘dollarisation’ and valuing.
 - 3.11.4 Apply the principle that independent measurement of key factors is crucial but that waiting for measurement is not an excuse to do nothing.
- 3.12 A closed-loop economy to create a zero-waste society—a manufacturing system that deals with its own waste, minimising its ecological footprint.
 - 3.12.1 Recognise the need to reduce landfill, perhaps through providing credit for landfill avoidance, reducing the cost of recycling, everything produced being recycled as far as possible, and resource recovery with waste as a feedstock for other industries. This would reduce energy costs. Consider the ‘Factor 10’ concept to reduce resource consumption (that is, reduce our impact by a factor of 10 by 2020 and support collaboration and cooperation by a factor of 10).
 - 3.12.2 Include the agriculture and energy sectors (high-emission sectors), with all buildings to be green by 2020 and flow-ons to all other parts of the economy.
- 3.13 Community engagement, knowledge building and education in order to create an environment that supports political leadership for fundamental change and better decision making for our businesses of the future.
 - 3.13.1 Educate decision makers in sustainability, so that decisions such as widespread land clearance in Western Australia do not happen again. Prevent ‘crimes against sustainability’.
 - 3.13.2 Create environmental hubs where consumers can go for information and answers.
 - 3.13.3 Use a Green tick (similar to the Heart Foundation tick) as a mechanism to educate consumers on the environmental impact and carbon intensity of their consumption choices.
- 3.14 Active rebuilding of resilience in nature and societies to avoid further loss and potential catastrophic breakdown of ecosystems.
 - 3.14.1 Recognise and reward environmental stewardship and biodiversity banking; perhaps set targets such as 20 per cent in protected areas by 2020.
 - 3.14.2 Concentrate development away from coastal zones, to contain our footprint.

- 3.14.3 Climate-proofing the economy: not just thinking 'locking up' areas; include carbon offsets, biodiversity banking, stewardship, and caring for country. Valuing and caring for biodiversity are essential. Fundamentally change the approach to agriculture by recognising the new opportunities and services climate change might bring.

Disagreements

The only area of major disagreement was to do with setting actual targets for protected areas: the protection concept was agreed, but the target was not.

POPULATION AND CITIES

Ambitions

- By 2020 our cities will be fundamentally different. They will be sustainable and will offer all residents access to employment, education, transport and affordable housing. They will be prosperous, diverse, creative and connected.
- By 2020 we will have a sustainable population and consumption policy: while the population grows, net consumption should decrease. This will mean:
 - a national approach to managing growth and immigration
 - policies that provide a framework to set sustainable immigration levels and distributes population across cities and regions
 - the need to concurrently examine the role of consumption and set targets to ensure we live within our means.
- By 2020, our cities will be among the most sustainable in the world underpinned by the principles of social equity. This will mean:
 - opportunity for all in terms of jobs, education and affordable housing
 - prosperity, creativity and diversity
 - cities are net contributors to energy and water supply
 - all homes and buildings are carbon neutral
 - all people in major cities are living less than 800 metres from access to mass transit public transport
 - there are clear performance goals and targets for sustainability
 - the population is fully educated in relation to sustainability.



IDEAS

- 3.15 Climate-proof low-income households—for example using compact fluorescent light globes, low-flow shower roses, and home energy audits. This acknowledges the impact of managing climate change on low-income households. It would apply to rental properties, where many low-income people live.
- 3.16 There should be a national agenda to plan for cities and population through establishment of a planning commission type organisation that sets goals and targets for cities. It is important that there be a re-engagement by the national government in planning for cities and examining the potential role of the Council of Australian Governments and federal funding to drive change across jurisdictions. This could include a sustainability audit of federal and state legislation to remove all unnecessary subsidies and regulatory burdens, as well as the consideration of the legislative arrangements needed for the future. The review of planning legislation was seen as a no cost idea.
- 3.17 Transport and infrastructure: to redirect federal funding from roads to public transport—passenger and freight. There should be a focus on driving compact and efficient transit oriented developments across all Australian cities as a means of supporting population growth at the same time as not increasing our ecological footprint.
- 3.18 A national building and sustainability system which creates an emissions reduction program for all new and existing buildings. The system would use measurable, reportable, verifiable methods. This would enable Australia to be a world leader, provide global leadership, and support innovation. This was seen as a breakthrough idea.
- 3.19 Education: develop a national school-level strategy that includes a broad public awareness program on how to be sustainable. Need to work with business to create incentives and achieve a fundamental shift in people’s thinking and behaviour.

Disagreements

- Creation of new institutions around problems may possibly be ineffective—particularly where there are institutions that already exist but might not be working.
- The practicality of redirecting funding away from roads and into public transport.
- Use of the term ‘cities’ or ‘urban settlements’ and whether adaptable housing and denser cities are needed.
- The need for, and the direction of, a population target.

It was suggested that a bill of rights is integral to a population policy, but the group regarded this as outside its mandate and more of a ‘how’ consideration.

YOUTH SUMMIT

Ambitions

- The Youth Summit's vision was for Australia to be a world leader in addressing sustainability and climate change. By 2020 Australia would be carbon neutral and run on energy from renewable sources, and the economy, society and the environment would be considered equally in all decisions made.

IDEAS

- 3.20 An Australian Sustainability Challenge: a competition between local communities, with the group making the largest shift towards sustainability winning a large government grant. This might include a change in behaviour through the uptake of green power, public transport, native tree planting or sustainable housing, among other things. The aim would be to engage local communities, create local jobs and bring 'sustainable thinking' to the mainstream at negligible cost.
- 3.21 Public transport: divert government road funding into public transport infrastructure, with the aim that every person who lives in an urban area lives within 2 kilometres of a train station, light rail corridor or high-frequency bus route.
- 3.22 Eco-Ed: sustainability education in primary and secondary schools.

BACKGROUND AND OTHER DISCUSSIONS

The following section represents a complete record of the background and discussion which informed the top ideas submitted by the groups. In some cases, these detailed notes represent group discussion and group ideas, in some other cases they document individual ideas that were put forward during discussion.

Climate change

One of the questions posed to the climate change discussion group was, what would Australia look like in 2020 if we realised our greatest ambition in this area and how do we get there? Matters raised in discussions covered a wide range of topics and views.

The climate change discussion group focused on mitigation while the sustainability discussion group considered climate change adaptation. Even so, the groups recognised that mitigation and adaptation need to be considered together and should not be treated separately.

There was intense discussion about coal as a source of energy and the role of clean coal technology in climate change mitigation. The discussion group took it as given that the government was committed to the Kyoto targets and an emissions trading scheme.

A number of themes were at the heart of the discussion:

- leveraging Australia's natural advantages and seeing climate change as an opportunity rather than a threat
- the role of education and information in changing behaviour
- a lack of confidence that existing institutions will deliver a sufficiently long term and independent response to managing long-term risk associated with climate change. There was a desire for a coherent national approach, independent of politics and state boundaries



- a desire for national leadership, both within Australia and internationally
- development of renewable sources of energy and clean energy
- the need for an integrated view on sustainability, which would include consideration of all settlement needs—transport, housing, water use, and so on—and would improve resilience and adaptability
- a sense of urgency about a clear and effective trajectory for avoiding climate disaster, recognising that the earlier we act, the easier the transition will be.

The main area identified for more research and information related to agriculture and included:

- research into the soil's capacity to store carbon
- more research into the carbon footprint of different agricultural production methods (cropping versus livestock) and systems (including transport).

Discussion of what Australia might look like in 2020 focused on the following areas.

Vision and leadership

- There was much discussion about the need for an overarching strategy, framework or plan to demonstrate government leadership and give the nation confidence that the problem is being confronted. It would overcome jurisdictional problems and positively engage with the community, but Australia needs to be wary of duplicating what already exists or discrediting it.
 - A coordinated national approach in a 'big picture' framework—including international engagement.
 - Climate change as a central organising principle for government action. This could drive a transformed energy sector: the next decade must be one of innovation and development.
 - Climate justice is an important organising principle to ensure all Australians benefit under a transformed economy.
 - Must be inspirational and reflect Australia's place in the world.
 - A central theme of acting together, enabling worthwhile global change, creatively harnessing natural advantages and positioning for the future.
 - Improving energy affordability every year from 2010 to 2020.
- We need a national energy framework and a national coordinated climate change framework, with an international hook to promote greater action in the region.
- A National Climate Action Agenda should include energy efficiency, transport, research and development. It would seek to decrease the regulatory burden and improve education and skills.
- We need to focus on sustainable development holistically and have an effective climate change policy as part of sustainable development—environmental sustainability, economic growth, and 'responsible stewardship of our energy resources', including reliable providers of energy and energy solutions to trading partners.
- A 'clean energy revolution' should include training, deployment and 'green job' creation. It could lead to Australia leading the world in climate change mitigation or being a global leader in clean energy solutions, a technology and service provider to the world.

- Australia could be a world-leading source of low-carbon products and expertise based on our natural advantages of sun, space and agriculture.
- There could be a national Green Jobs Program, which could include an energy efficiency corps, a clean energy corps, a climate science corps, and volunteerism.
- Leadership in reducing Australia's ecological footprint: by 2020 we could be honoured around the world as the least-wasteful nation on the planet.
- Well before 2020 Indigenous Australians should be part of the dialogue on climate change policy. We need to take social equity into account in developing a comprehensive response to climate change.
- Increasing market leverage of deforestation could assist with biodiversity and salinity issues: by 2020 'our natural resources have become a powerhouse in sequestration'.
- Looking back from 2020, people should see our actions as 'wise and enlightened'.
- In 2020 climate change must be recognised as a global public health concern.
- Our climate change strategy should improve the resilience of the economy and the environment. By 2020 we should have averted climate-related crises and be resilient enough to overcome challenges.
- We need a portfolio of iconic clean energy projects to drive change—could be both a source (solar, geothermal or carbon capture and storage) or a sink (biosequestration).
- We need to build public agreement and confidence in high levels of national investment, analogous to the funding of the Australian Institute of Sport after the Montreal Olympics.
- A national energy framework and nationally coordinated climate change framework could include an international hook to promote greater action in the region.
- An Australian sustainability challenge could include sister sustainability cities in the region.
- Set an iconic challenge and meet it with funding.

Institutions

- The structural and institutional foundations of climate change policy were examined. There is a need for robust institutions to support national and global action. We also need to effectively implement Australia's own climate change-related policies, to demonstrate that we can make a difference. Policies could include regional partnerships.
- There was a call for policy frameworks and institutions that are beyond the politics of government—that is, do not change every three years—and take a long-term view—for example, to 2050.
 - There are lessons to be learnt from monetary policy independence—for example, the Reserve Bank of Australia.
 - We need institutions that are able to manage risk in the face of uncertainty, including in relation to the economic consequences of climate change.
 - The idea of a central carbon bank was proposed.
 - Credibility is necessary.



- We need financial and regulatory institutions that can respond to information (environmental, economic and global). We need to transform politics and governance—state versus federal government and across the divide.
- More transparent environmental markets are necessary, including transparency of corporate environmental information. Use the advantages of financial markets for carbon.
- Consider regulating market frameworks to promote sustainable practices with measures that complement the market.
- Consider a carbon trust to leverage opportunities in small business.

An Australian Climate Information Authority

- We need a governance process to deliver climate information to the community.
- It must be an independent, trusted, verifiable, government-funded fact base of institutions that goes beyond electoral cycles. Such an authority would inform and mobilise community action (having a public education capacity) and would need to be aligned constitutionally.

A Clean Energy Authority

- There are 69 state and national processes in the energy sector. This sector represents 50 per cent of emissions. We therefore need a single energy authority and a single coordinated approach to take us to our target.
- This new organisation could be funded by government, and trusted by business, to leverage action and share information—a single, one-stop Clean Energy Authority. The main thing the entity would do is provide support for carbon capture and storage in terms of storage maps and drilling plans. Perhaps a carbon capture and storage target, to supplement a renewable energy target of 10 000 gigawatts by 2020, is needed. Carbon capture and storage commitments could be modelled on European Union-style targets.
- A renewable energy task force could identify emerging flagship projects.
- Any retrofit program should give priority for low income households.

Information and education

- Education is crucial if we are to prepare people for change.
- We need to consider a national climate education strategy, to ensure that there is early education and skills training at schools. It might be possible to export a world-class climate education facility. The process might include energy audits of schools.
- ‘Eco-education’—to understand the impact of lifestyles and impacts on landscapes—needs to be at all levels. There is the possibility for a world-class institute supported by philanthropy. A worldwide climate academic facility should include curriculum development.
- A transformed education system is needed to drive community awareness. Education about climate change and sustainability should be integrated across disciplines.
- We need better information to help promote change and to invest in getting clear, independent, verifiable data to better inform the economy and the community. Consistent public messaging and clear consumer information are essential. And the information must be able to be translatable into useful tools, rather than be an impost on consumers.

- There is a role in changing behaviour to comprehensive product labelling—to disclose products' carbon life-cycle cost, embedded energy and water—and possibly mandatory disclosure of emissions from installations of a certain size.
- We need to invest in developing an information base that could include improved mapping methods to deliver important information that will inform consumption decisions.
- Community groups must be engaged, to enable them to create local solutions to local challenges—for example, through community sustainability forums.
- A 'national clean energy corps' could train the wider Australian community in clean energy.

Targets

- Targets can have value in giving expression to aspirations or goals and encouraging communities and individuals to change. They should not be absolute, though, because they need to take account of how national priorities change with time. We also need to be mindful that it is possible to have targets that could be seen to be mutually exclusive: for example a target to grow GDP at 3.5 per cent a year might conflict with reducing waste. The following are examples of targets discussed:
 - *A common energy efficiency goal.* A mandatory target or a voluntary energy efficiency target over and above the mandated target, to prompt further community action. We need, however, to be mindful of impacts on the emissions trading scheme
 - *Clean energy targets.* For example, it would be unacceptable to have new dirty-coal power stations
 - *Renewable energy targets.* These can be for base load solar energy generation, clean power stations, solar panels on every new house in Australia and installation of smart meters, as well as large underwater turbines to generate energy from renewable sources. A target of 50 per cent of energy to be derived from renewable sources by 2050
 - *Carbon positive targets.* For example, targeting an increase in forests to slow the growth of, and possibly reduce, global accumulated carbon emissions in the air.
- Once a target is set, we must focus on overcoming obstacles to achieving it.

Transforming the economy

- Harness our natural advantages: use the leverage of our mineral endowment (coal and liquefied natural gas) and our influence as a leading supplier.
- Households must understand the need for change and how to bring it about. Take people with us: this can't be at an elite level. Everyone in Australia must participate, the community must be brought along. Every person must feel they can make a practical difference.
- The emissions trading scheme will be a potentially blunt instrument if consumers cannot choose to change that behaviour.
- Government has a central coordinating role to bring a cohesive approach to the response to climate change—to avoid counter productive competition between sectors.
- Sustainable growth and improved future prospects would be enhanced by utilising our natural capital.



- One of the implications of climate change will be higher energy costs and a need to transform yet maintain lifestyles and standards of living. How do we assist low-income earners in this context? Discussion focused on:
 - improving energy affordability every year from 2010 to 2020
 - energy efficiency—for example, ‘green certificates’ for low-income earners, redeemable for household energy efficiency measures
 - behaviour change and the importance of education at an early stage—junior and secondary level
 - supporting consumers to choose to change their behaviour
 - the need for broad community engagement and commitment—local sustainability forums, to discuss matters that affect people
 - transport options
 - clean energy targets versus targets on the use of energy from renewable sources.
- The emissions trading scheme needs to be compatible with the available options and allow the community choice and an opportunity to actively participate.
- Excise on coal exports could be used to reinvest in clean energy.
- Mandatory fuel and energy efficiency targets.
- Mandatory superannuation increased to 12 per cent, with the extra 3 per cent invested in clean energy projects.
- Personal carbon budgets should be tradeable.

Global agreement and regional role

- Australia should take a leading role in positively transforming society and the economy through being part of an ‘global effective agreement’. ‘A global effective agreement that avoids dangerous climate change internationally, with Australia following a trajectory which does our bit and also transforms our economy and society’. By 2020 Australia is delivering on a trajectory of emissions reductions embedded in an international set of commitments.
- Australia could join with Indonesia and Papua New Guinea in a climate change agreement: assist their economies and facilitate their emission reductions.
- Australia has a leadership mitigation role to play in the Asian region, politically and economically. It could have a significant influence in Asian mitigation: we need to be a technology test bed.
 - ‘Man on the moon’-type targets and visions.
 - Specific technology targets to drive it.
 - A strategic supplier of clean energy for Asia.
 - Facilitating transfer of technologies to Asia.

Research, science, technology and demonstration

- We need to strengthen and build our science research base, including fundamental climate science as well as applied science, and encourage an honoured place for the sciences and engineering.
- We need to devote adequate resources to technologies and approaches in which we have a natural advantage and a national interest. For example, we need to recognise the need for a clean coal solution. Incentives for the commercialisation and deployment of these technologies might be necessary.
- Consideration of an holistic technology response. For example, grouping carbon capture and storage with solar-powered transmission and transfer technologies.
- Superannuation could be scaled up, with the extra money going into clean technologies and obtaining energy from renewable sources.

Energy

- An energy efficiency theme is needed in transport, buildings and products.
- There was discussion about energy preferences and the need to recognise that there are advocates for and against all energy sources. For example, there are negative community views about wind as well as nuclear. We need to take care not to put a technology solution aside solely on the basis of community views. We need to have the same standards or criteria against which all technologies are assessed. And we should consider action in the broad context of 'public acceptance', along with cost and feasibility.
- It could be argued that it makes sense for Australia to produce all the energy in the world, if that is the cleanest way for the world to do it. This would drive per capita emissions up for Australia, but could lead to a better global outcome.
- Consider a flagship of two to three clean energy projects in areas of comparative advantage that engage Australia's skills and national interest.
- Consider converting or replacing existing energy sources to clean energy, using agricultural and natural energy sources.

Renewable sources of energy

- We need a framework and infrastructure for opening up renewable energy resources.
- Higher use of renewable sources of energy, biofuels and biomass, recognition of natural resources' role—vegetation and soils. Don't leave natural sequestration out of the equation.
- Renewable energy targets are inadequate: we need to identify prospective technologies and pick winners.
- The Youth Summit called for all new energy sources to be renewable.
- Australia needs to develop solar technology. The market does not seem to want to do it, but technologies exist and the potential for employing solar technology is more accessible than that for wind sites.



- Deploy more resources so that we can gain an understanding of the potential for renewable energy sources to provide base load power—geothermal, solar and wave. We will need premature closure of coal power stations plus an efficient system for distributing that energy.
- By 2020 the biofuels industry should not compete with food and water production and usage, while re-energising rural Australia.
- Consider extending the Snowy Hydro scheme—backed by community engagement.
- A national transmission system under which connections to clean energy generators are free.

Clean coal

- By 2020 clean coal technology should be demonstrated with a successful Integrated Gasification Combined Cycle station, there has been a retrofit of carbon capture and storage technology, and there is an infrastructure project for sequestration.
- Well before 2020, there should be a public–private commitment to carbon capture and storage projects.

Nuclear energy

- It was stated by a participant that we need to recognise that nuclear energy will be part of the global solution but is unlikely to be part of Australia’s solution.

Land use and transport

- Transport, including an expanded public transport system, must be taken into account.
- Consider electrifying ground transport in south-eastern Australia—for example, electrified rail between Melbourne, Canberra and Sydney.
- Consider accelerating the turnover of the car fleet—recognising that you will need to support low-income earners, who often drive the furthest.

Water

The water group focused first on ambitions for 2020 and then the path to realising those ambitions. The ‘breakthrough idea’ concerned northern Australia, in relation to which the group strongly felt that water resources should be holistically managed—unlike in the Murray–Darling system—and that the lessons learned in the south should be taken up.

The following were among the themes to emerge from the discussion.

- Implement existing government commitments on water. Many of the initiatives being discussed were committed to by previous governments, but often not followed through.
- There is a need for participatory governance in relation to water, to engage the community in the allocation of water resources.
- Simplify and reform existing institutional and governance arrangements: there are too many layers of government and conflicts of interest in existing arrangements.
- Get the price right for all markets in water and carbon.

- More data on, or research into, tropical water system conservation and sustainable use is needed. There is especially a need to better synthesise and analyse information into a better understanding about the different seasonal nature of tropical rivers.

Discussion on the points that underpinned their ambitions for water by 2020 was as follows.

Water systems

- There are sustainable allocations of water in all systems by 2020. Environmental flows are restored to the Murray River, including at its outlet.
- Groundwater storage and recovery should be better used to manage severe droughts and ensure continued supply.
- Development in northern Australia must avoid the export of problems and poor practices from southern Australia.
- There should be competitive private sector involvement in delivery and distribution systems.
- Plan to develop and grow where the water is, rather than delivering it across the country.
- Develop a climate-resilient water supply by diversifying water resources and investing in innovative infrastructure, technology and skills.
- Treat northern catchments as a unit, with a cooperative management plan for northern water and savannahs, probably through a Council of Australian Governments agreement on northern development.
- Develop a national policy on rivers and their use, including damming. The aim would be to protect 100 free-flowing rivers by 2020, with strong federal government oversight.
- At least 30 per cent of natural flows must be restored to river systems.

Urban water

- The price of urban water could be used to balance supply and demand instead of using permanent urban water restrictions. Cutting back demand is not a long-term answer: we need to focus on supply and price signals.
- All major urban centres could derive a high percentage of their water from climate-resilient sources including re-use, noting that complete recycling is not always possible or desirable. This includes low-energy desalination, indirect potable recycled (purified recycled water) and stormwater re-use.
- By 2020, all water runoff should be captured by houses and reused on site, for non-potable purposes.
- Urban water utilities should be sustainable and carbon neutral.
- High percentage targets should be adopted for urban water supplies to derive their supplies from climate-resilient sources, including re-use.



Agriculture

- By 2020, the optimum footprint of irrigated agriculture should be determined to allow better management of the agricultural footprint. Food production is a crucial factor in the water debate.
- Intensive agriculture that manages water and energy efficiently and effectively should be encouraged.
- The \$10 billion allocated to restore the Murray should result in twice the agricultural production for only half the amount of water, with the community engaged and common values recognised.
- One hundred per cent of nutrient-rich waste water from urban centres should be re-used in agriculture instead of being disposed of.
- Further institute ecosystem services payments to landholders to improve water quality on their land.
- Water trading could be accompanied by payments to farmers to upgrade water infrastructure.

Technology, innovation and investment

- Technology is important to solving our water problems. A key is to encourage investment in a range of solutions, and a pro-investment and innovation strategy is needed.
- To encourage investment in multiple water technologies and supply options, water pricing must be addressed.
- There is a need to turn climate change adaptation into an economic and environmental benefit through investment in innovative technology, including desalination, stormwater harvesting and recycling.
- The technologies adopted should be carbon neutral. There was concern that some technologies for desalination are too carbon intensive.
- Water infrastructure must be efficient throughout the system of capture, delivery and use—including appliances, pipes and water channels—and water leakage must be addressed.
- Water should be recycled many times and have multiple uses, with no single use by 2020.
- A 10-star standard for water efficiency should be implemented, with more minimum efficiency standards.
- Consider options for further private financing of infrastructure.

Data and accounting

- Water indices and data should be developed to better manage water, understand water issues and communicate this information to a broader media and community audience.
- Performance in the reform of water management needs to be measured against existing agreements, perhaps via a score card.

Water industry development

- By 2020, there should be improved capacity development in the water industry through improved multi-disciplinary education and training, with a particular focus on young people and professionals.
- There should be better dialogue facilitated between water professionals and climate and weather scientists to grow the knowledge base of the sector.

Indigenous engagement

- There needs to be greater recognition of Indigenous land resources and stewardship in the development of water resources—for example, through improved environmental stewardship payments that can assist in reducing passive welfare.
- Adopt a land and water stewardship role for Indigenous communities.

Governance

- Water needs to be treated as a strategic resource, the supply of which is variable and must be adjustable to climatic factors, whilst recognising that there are non-linear pathways for water use and that it should be used multiple times.
- Australia is richly endowed with water, although there is a need to use it creatively and wisely. A changed perception and discourse are required: we should stop using ‘averages’ for water measurement.
- It was noted that people in south-east Queensland have voluntarily reduced their water consumption, which was achieved through community engagement.
- Overall ownership and management of water infrastructure needs to be under public and government control, although water services can be privately provided.
- Fully implement water trading across the board, including between rural and urban areas, to ensure efficient allocations.
- Governments need to deliver on commitments already made.
- Because of the energy cost, water should be used in situ as far as possible and not be transported vast distances.
- We should not lose the advantage of low-energy water and should actually use it to generate small amounts of hydro-energy.
- Water planning needs to be flexible and based on the principles of diversification and decentralisation, with incentives for groups to engage in water self-sufficiency.
- The federal government should control the Murray–Darling Basin and override parochial state views with effective regulation of the river system.
- Water management needs to take account of the landscape involved, to simultaneously protect biodiversity. This could preserve the quality of water run-off within catchments.



Sustainability

The sustainability group focused on adaptation and the question of what do we do if the world does not come together to address sustainability. It realised the importance of considering the precautionary principle and that Australia's biosystems may not be as resilient as we think they are.

The main themes reported were as follows:

- changing patterns of consumption: don't just buy green, buy less. Price around the energy and broader ecological footprint implications of products
- using a variety of levers to affect changes in behaviour—for example, taxation, incentives (positive and negative) and regulation
- ownership of action: shared responsibility
- urgency
- can we wait for a sustainability revolution? Do we need an immediate intervention?

Areas for further research centred around better measurement of the scope and scale of issues and developing recommended institutional and data changes. Another urgent research priority was the development of technologies to address climate change and emissions reduction. The group considered that the scale of the problem requires innovative technology solutions, and these need to be deployed more rapidly.

The summary points were derived from discussions that covered the following:

- targets—zero footprint, measurement, and so on
- strategies—use of markets, incentives, pricing, getting the metrics right, and so on
- barriers to getting there—which includes markets, incentives and pricing
- building resilience in communities—capacity, education, equity, a better knowledge of risks and vulnerabilities.

A summary of the discussions that developed from considering these points follows.

Vision and leadership

- A vision of a sustainable Australia, integrating community, economy and environment, reducing impact and building resilience. Opportunity to maximise potential from the landscape and create new industries, new skills and other services that could be exported and form the basis of an ecosystem services-based economy.
- A national sustainability reform agenda, coming from a desire to rethink institutional arrangements. Reframe thinking to remember that the economy is a sub-set of society, which in turn is a sub-set of the environment.
- A zero-waste society: recycling may be key to reducing carbon emissions; penalise contributions to landfill; green credits for lower contributions to landfill. Can be a weapon against climate change. Addressing landfill emissions would have a significant impact on sustainability. Landfill trading schemes and carbon credits for avoided landfill would provide economic incentives for action.

- A Factor 10 strategy: reduce our impact by a factor of 10 by 2020 and support collaboration and cooperation by a factor of 10.
- The interconnectedness of life: climate, population and resource scarcity are all interdependent and need a holistic approach in actions. We need to value this interconnectedness and act now; the young want a safe climate and healthy ecosystems.
- A 'war room' response is required to encourage rapid technology development for low-emissions technology. We need to significantly increase R&D to respond to the challenge. The role of technology and supporting innovation to make step changes. The R&D cycle is too long for the urgency of the task at hand. We need to overcome the risk-averse market for technology development, perhaps through incentives.
- Tackle climate change as a priority: the precautionary principle. Australia is not as resilient as we think; we need to focus on the longer term—50 to 100 years—and then come back to practical actions which need to be taken now.
- Seek balanced environmental outcomes through an inclusive, involved, empowered society and institutions. Consideration of equity and impacts on the disadvantaged.

Planning, land use and urban design

- The savannah of northern Australia is integral to the future development of Australia. Any projects there need to be inclusive of Indigenous people, biodiversity conservation, and future community development needs.
- Consumers need to assert their purchasing power for six-star buildings.
- Shared development of the landscape: address cross-cutting issues in land development and use.
- Provision of ecosystem services: take this into account in planning and land use decisions.
- Building standards: aim for a major increase in 'green buildings' by 2020? If buildings represent around 23 per cent of emissions, then higher standards could have a significant impact on reducing demand for water, energy and materials.
- Recognise that land use other than for traditional food and fibre crops is valuable. For example, stewardship and diversification of livelihoods are equally valuable.
- An integrated approach to natural resource management: healthy rivers benefit all communities and the environment.
- We need to tackle the big sectors of transport and agriculture, to make significant gains in these areas in terms of energy efficiency, CO₂ reduction and water conservation.
- Planning should concentrate on population settlements. Avoid coastal strip development, building on flood plains, and so on. Plan to avoid the 'coastalisation' of Australia.
- Developer responsibility should be encouraged in addition to a green building code or reform of Building Code of Australia.
- Manage waterways from source to sea.
- Recognise and reward contributions to the provision of ecosystem services.
- Pay for environmental stewardship and encourage sustainable farming practices.



Incentives, signals and targets

- Cooperation policy versus competition policy.
- Technological innovation—‘necessity is the mother of invention’.
- What signals can be developed to lead to an outcome where environmental and social impacts outweigh economic impacts? What are the top 10 to 20 sustainability indicators?
- The role of targets and measurement: measuring leads to better valuation and pricing, which can lead to realignment of values and priorities.
- Square off sustainability with economic and social agendas: measure it, price externalities in ecosystem services.
- The role of price signals to redress over-consumption: we need to improve valuations and get the market working better to encourage appropriate valuation. Demand-side management can tackle untapped opportunities for energy, waste, water and resource consumption. We need to address market failures.
- Adequately resource Indigenous land management arrangements and recognise them as legitimate players in caring for country.
- We need new approaches to build community recognition of biodiversity and cultural and community values and also to create revenue streams that will endow those communities for the future.
- Community consciousness needs to be built to demand green buildings, clean energy, and so on.
- Tax reform: examine where changes in tax might drive behavioural change—for example, novated leases on cars and Fringe Benefits Tax, reform research and development tax concessions to focus on sustainability. Devote defined government revenue streams to sustainability projects—for example, from carbon tax, and so on, to support innovation in sustainability. Tax to drive behavioural change, appropriate pricing. Tax structures to raise revenue for sustainability initiatives—for example, conservation farming, plant and animal species preservation and landscape restoration.
- Align economic levers to remove perverse incentives.
- Target to be a lead exporter of sustainability technologies and services.
- Explicitly link environment, productivity, innovation and competitiveness agendas.
- Sustainability ambassadors could be deployed at the local level to help promote knowledge sharing and encourage sustainable behaviours.
- There could be a suite of national sustainability indicators.

Institutions

- There could be a Sustainability Commission (or equivalent) to review tax and planning, monitor progress and implement a national sustainability and climate change policy. It could also be the body that administers an independent carbon bank, monitors productivity, and so on. It could become the alternative machinery of a new economy and provide equivalent services to current economy-driven institutions. It could include social and environmental dimensions in equal measure.

Information and education

- Education is vital to positive action: everyone needs to be better informed to change behaviour, and action must be backed up by incentives and sanctions.
- Regular company reporting of sustainability indicators: a low-cost option could be to mandate triple bottom-line accounting for companies, using 'balancing act' methodology—developed by the University of Sydney and CSIRO—to map resource inputs and areas of wastage in different sectors. Additional information could be gained using existing company registers and making sure everyone is using the same standard for reporting.
- We need to engage and empower people, perhaps through better information and accountability mechanisms to reduce their consumption: indices that mean something and are regularly updated. An energy balance label on appliances is more helpful than just energy efficiency.
- Measuring, mapping and managing risk: we need to check if current systems should be adapted and changed; don't perpetuate current management systems if they are not working.
- Accurate measurement is a dilemma: measuring the wealth of the nation should also include natural and human assets.
- Natural disasters cost our society in both economic and social terms. Australia made the top 10 in the global disasters list in 2007. There is value in extensive preparation and design of infrastructure for resilience, not just rebuilding vulnerabilities after an event.
- We need to understand Australia's environment better—how our natural systems work and where wastage is occurring. Introduce incentives in legislation for waste abatement and resource conservation.
- We need to bring all aspects of society along, and don't leave low-income or disadvantaged groups behind.
- Communicating carbon intensity across products: removing high-intensity ones, a green tick for quick decisions, standard across the supply chain.
- We need to ensure that sustainability is affordable and that people understand how to make sustainable choices.
- Getting sufficiently qualified people in the right areas and improving the quality of the curriculum are essential.
- Developing a national campaign for environmental education or at least some aspects—for example, sustainable consumption and water and energy reductions. It will require nationwide, consistent messages and could be supported by curriculum change to encourage sustainability education. This would be complemented by a 'green schools' building program.
- An environmental hub concept: a one-stop shop for information on availability, labelling, accessing and adoption of sustainable technologies. This could be run out of local councils or government shopfronts and be supported by a phone hotline for quick advice.
- Using an 'eco-warrior' concept to better educate and engage people in relation to environmental matters, choices, and so on.
- Amalgamating data from the natural resource management council or regional level to the state and national levels, as well as more broadly in a region.



- Building the skills base in and knowledge of sustainable farming and promote the value of stewardship.
- Educating the 'white' population on Indigenous culture and traditional knowledge and then harness the intellect of all to solve sustainability challenges. The global network of Indigenous peoples who share knowledge and discuss emerging concerns could act as a model for collaboration.
- Sustainability Intervention: go to regions, diagnose problems and develop plans for action. Quarantine payments until action is taken. Need to prevent 'Crimes against sustainability': for example, clearing of the Western Australian Wheat Belt is now costing millions of dollars in repairs and lost productivity. We need to make sure that this does not happen in northern Australia. Intervention for the national benefit: part of a rebuilding and refocusing initiative.
- Considering curriculum change: sustainability education for adults in organisations, not just aiming at schoolchildren.
- A 'green card' for company directors and professionals, making sure decision makers are educated in sustainability, ensuring engagement across the community.

Culture

- Culture-based economics: get society to recognise and value sustainability; make it meaningful within Australian culture.
- A green or sustainability revolution: green-collar jobs, a new range of employment options, replacing payroll tax with carbon tax. A sustainability intervention: time to dictate actions across local government, institutions, and so on.
- Acknowledging the social context of community sustainability and value Indigenous knowledge more highly.
- We need to look outwards as well as inward: lessons are to be learnt from other countries and cultures?

Biodiversity

- A sustainable northern Australia: some of the world's last vestiges of pristine environment are in northern Australia and need to be protected. We need an inclusive and distinct vision for northern Australia, recognising the Indigenous peoples, stewardship of the land and sea, biodiversity conservation, and future community development needs.
- Biodiversity banking: threatened species legislation is not working effectively; we need to have banked the biodiversity before developments occur—build in incentives for a zero-based footprint by developers.
- Environmental stewardship: ensure that the agricultural sector and broader community value this. It is important to link with Indigenous activity. We need to recognise the value of biodiversity conservation in all landscapes, not just in protected areas.
- Given that we are already losing species due to land clearing and diverting environmental water flows, we should not use lack of measurement as the excuse for not taking action now. Valuation may be the key to taking action.
- Developing links between community and country in upholding biodiversity values.

- The extinction crisis: we need a strategy for giving plants and animals the best chance of survival. We are dependent on ecosystem services, so a target of 20 per cent in protected areas by 2020 is desirable.
- A zero-footprint society: changes and offsets for biodiversity restoration. Sustainability is an inclusive concept.
- Consider extended producer responsibility through legislation to redress wastage at the end of life—particularly for electronic goods.

Population and cities

The primary questions posed to the group considering populations and cities were, what would Australia look like in this regard if we succeeded in achieving our top two or three ambitions and what are the areas of change in order to reach that future? For example, there were questions about cities and population and how to accommodate population and economic growth with a lower ecological footprint—the comment was made, ‘how can you be fat and slim at the same time?’ This has implications for urban design, including transport infrastructure, systems and homes. There was also a debate about the definition of ‘cities’ and whether this meant only capital cities or also regional centres.

A number of themes were developed in the discussion:

- Planning for sustainable cities—goal and target setting. A need for new governance arrangements at a national level.
- Transport and infrastructure investment.
- Policy for population and consumption—increased population and reduced net sustainability impacts.
- Education: capacity building in research and collaboration, and public education and awareness campaigns.

Some of the other discussion was around the following topics.

Vision and leadership

- Identification of the challenges and opportunities leading to 2020 to drive a sustainable urban future which can accommodate growth and change whilst not increasing our ecological footprint.
- In pursuit of an urban future.
- Climate-proofing low-income households.
- National leadership on population policy, sustainable cities policy, and building standards and codes. Need to re-engage at the national level.
- By 2020 there should be a National Sustainable Population and Consumption Policy—developed by a new Population Council—that emphasises how we move people, is driven by measurement metrics that are clear and verifiable, and ensures that cities are connected by information technology as an alternative to transport.



Population and migration

- There should be free and open discussion of the subjects of cities and population. Population is a lateral theme and was often mentioned in public submissions. There was broad agreement on the need for a population policy but that that would not be resolved at the summit.
- There was a question about whether we must agree on Australia's population size first, before we can deal with other concerns. The population should grow, continuing at a record rate to 25 million.
- A sustainable level of population depends on our lifestyle choices. Do we have the ability to sustain more people?
- Reference was made to the 1994 House of Representatives' inquiry that looked at the need for a national population policy. It was argued that we have never had a debate about a sustainable population, and the topic also came late to the Council of Australian Governments agenda.
- Given that we live in a global economy, Australia's ability to control its population through migration is limited. The (permanent) Migration Program is small compared with temporary migration. Should we consider unskilled migration? Should we be more generous about immigration?
- It is not the number of people that matters; it is about the footprint per head.
- We need to consider Australia's role in accepting climate change refugees.
- We need to look short, medium (2020) and long (2050) term as an approach to population growth and sustainability.
- We need a complete review of immigration policy. We should look at the potential that immigrants have, rather than the skill set they bring to Australia now. Policy would be enshrined in international human rights law.

Climate-proofing the economy

- Climate-proof 1 million low-income households in the next 12 years, including through low energy use (electricity-based) and low water use. This would be done through the provision of infrastructure such as compact fluorescent light globes and grass-roots education.
- Consider introducing a range of legislative mechanisms that require zero impact on the environment by 2020.
- Consider a range of privately and publicly funded incentives to cap emissions from all buildings and homes by 2020.
- Engaging businesses by finding ways of decoupling economic growth from consumption: move from buying to hiring, for instance. Examples are pianos and other major cost items, as well as utilities.

Sustainable cities

- Cities must give everybody a fair go. Transport, recreation and culture must be linked in with prosperity. Jobs, education, affordable housing. This allows a platform for city prosperity.
- Significant regulatory change is required for appropriate cities planning at the national level. There should be national targets or objectives for urban development and planning standards. Targets also need to be set and achieved for particular building types.
- Establishing a national sustainable cities policy with specific Ministerial responsibility.

- All decision making and policy setting on nationally sustainable cities to be achieved through a Council of Australian Governments review, supported by a Sustainable Cities Commission, which examines national and state-based urban planning against sustainability indicators.
- Sustainability indicators could be triggers for federal recycling of funding through emissions allocation options into areas where so far, there has been public policy failure—public transport was cited as an example.

Education and information

- A national campaign for households on how to save energy and lower energy use.
- A higher education requirement to instil sustainability knowledge and skills in every sector.
- Establishing an Institute for Sustainable Cities, modelled on the Australia and New Zealand School of Government, which is a distributed model that coordinates knowledge and expertise within government and educational institutions at the national level.
- Commonwealth–state collaboration on a national education campaign to explain the benefits of a reduced carbon footprint, looking to the European models of diversity rather than North American.

Governance and accountability

- A National Population Council would set levels of immigration but would bring every topic in, not just immigration. For example, it would also look at related housing, energy, environment, education and training factors, and it would take the politics out of the population and immigration dialogue.
- The federal government to be accountable and report on a range of legislative, regulatory and policy decisions.
- The federal government to take leadership in population and city planning and policy. The first step would be a review of all existing legislation, including an assessment of what is currently in place and what is needed for the future.
- There should be a legislative requirement that all new policies have a sustainability impact statement—the impact on wellbeing and sustainability, linked to education. The benefit of impact statements was, however, questioned by a number of participants because current cabinet impact statements do not inform policy decision making.
- Scepticism about establishing new institutions to tackle existing problems: it is dangerous to identify problems and establish institutions around them.
- Do we have a system of governance in Australia that allows us to make good decisions about sustainability? We need a place-based system of governments. We need city governments with regional governments—unlike what we have at the moment, based on state boundaries that are artificial.
- We need to decentralise facilities, including government departments. Cities have so far been created in the image of Westfield shopping centres.



Transport: road and rail, public and private

- Remodel the way government looks at its land transport funding. Put money into public transport infrastructure, rather than roads. Examine the introduction of a congestion tax as a longer term goal, although it was recognised that you need to properly fund transport infrastructure before you can set a congestion charge on cars.
- There is an urgent need to invest in passenger and freight rail and stop reliance on road transport.

Sustainability and our ecological footprint

- Questions of sustainability are social and ethical as well as economic. The Commonwealth and the states and territories should collaborate on tax and other measures that discourage the use of energy waste in transport and set clear goals for reducing our dependence on carbon dioxide emitting activities and technologies.
- We could have an ambition for our population to increase but for there to be no increase in our ecological footprint.
- To have the most sustainable cities in the world, we may need new policies to include a sustainability impact assessment or an intergenerational impact statement: An Asia-Pacific Institute for Sustainable Cities or independent national Sustainability Commission.
- An ambition for Australia: to be a world leader in sustainable urban design.
- How to define ‘sustainability’? Does it refer to ecological sustainability or is it used in the wider sense of the triple bottom line—economic, social and environmental?
- Identify key national sustainability targets and measurable performance indicators.

Buildings and urban design

- It was argued that building is where market failure is happening. We need to create awareness of the role of the building sector: it is not in the Garnaut review. Reforms will deliver health and productivity benefits and drive skills and jobs growth, including opportunities overseas.
- Cities should become car unfriendly—a less consumerist society.
- Waste reduction: make people and organisations responsible for the resources they use.
- Ambition to have the most liveable and sustainable cities in the world.
- Need for more ‘know-how’ on sustainable living, especially at universities.
- Cities with minimal impact and moving to self-sufficiency in resources. Past zero impact; heading to positive impact.
- Adaptable housing, denser cities.
- A broad-scale upgrade of existing housing stock and standards on new housing.
- People valuing green infrastructure and setting targets.
- Australia could generate income through the advice on sustainability it provides to other countries.
- All new buildings have emissions and water performance measures.

- Energy and water efficiency retrofit when buildings change hands.
- Endorsing the report of the House of Representatives Standing Committee on Environment and Heritage Inquiry on Sustainable Cities, which was released in 2005.
- Developing an Australian Sustainability Charter with a Sustainability Commissioner.
- Creating a Commonwealth Network on sustainability to build capacity and develop understanding.

Equity

- We need to look at the impact of changes on low-income households.
- Ambitions to reduce ecological footprints need to take account of disadvantaged people progressively increasing their consumption to become less disadvantaged.

Youth Summit

A delegate from the Youth Summit provided input to the Sustainability stream's full stream session. The main ambitions and concerns put to other stream participants were:

- Act now on climate change, loss of biodiversity and water scarcity.
 - On 18 April 2008 representatives from Australia's 20 biggest youth organisations signed a petition to express their concern.
 - Over 80 per cent of submissions to the school summits held around Australia were about climate change and sustainability.
- Hold people accountable for the decisions made.
- 'Think global, act local'.
- Help people to know what they can do to act now to respond to climate change.



