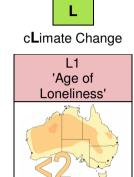
Workshop Handout **Scenarios**

Project 2.7 Leveraging R&D for the Australian Built Environment



Scenario 1



S Skills

C e**C**onomy

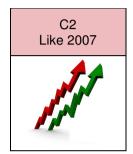
Attitudes

Policies/Governance

Е **E**nergy

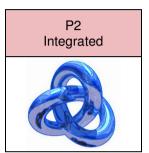


S3 STEM+



A1 Be Yourself and Win





E2 Proactive Transition

L1

'Age of Loneliness'[‡]

Temperature increases below and up to 2 degrees.

Australians are bumbling along without needing to adapt.

Biodiversity is seriously affected; finely tuned ecosystems are breaking up. A third of all species world wide on their way to extinction.

Half of summers are now warmer than 2003.

Marine deserts are spreading – plankton badly hit by the acidification.

Rivers and vegetation and crops are drying up or dieing.

Cyclones are more intensity, but not more frequent.

Increased intensity in both high rainfall events and droughts.

S3

STEM+

For conditions of a strong evolution in science and engineering capabilities. Highly proficiency in use of technology. Hence raised productivity across many areas not only labour.

Scientific discoveries are rapidly converted into technologies although some technologies turn out to have unforeseen negative consequences.

C2

Like 2007

World economy returns to the high growth period just before the 2008 financial crisis.

Global economy is operating on all cylinders.

Emerging economies are on the rise and developed countries have recovered from their financial woes of the 2008 financial crisis.

A1

Be Yourself and Win

Australian is a country full of opportunity and gain; low income tax rates.

Be confident and prepared, fast to react, one step ahead, have clever branding and brilliant leadership then you cannot fail to be wealthy.

The real winners develop new ways of managing knowledge.

Spread your risks by beating the markets.

Leisure time and the size of one's balance sheet show that you have been able to make it for vourself.

A new world order is emerging and institutional power is weakening. Australians are building a new world and making lasting choices with radically new ways of thinking.

P2

Integrated

Governance structure that integrates the very local with the global through

intermediary levels. Preserves diversity and finds

commonality at the global level. Interdependencies are recognised.

There is harmonisation of regulations, both between states or nations and between different levels of government.

E2

Proactive Transition

Australia has been fully converted to green energy.

No longer GHG emitting fuels or energy sources being used that are not being fully mitigated.

Even where unmitigated GHG fuels or energy sources could be supplied, there is no market.

Hence energy demand is only constrained by the total green energy supply.

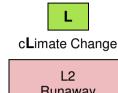
Emissions targets are no longer in use since there is no requirement.

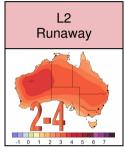
Workshop Handout **Sectors and Factors**

Project 2.7 Leveraging R&D for the Australian Built Environment



Scenario 2







S4

C

Attitudes

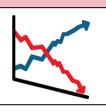


Е Energy

e**C**onomy



C4 Return to 2001



A2 Community



Policies/Governance

Piecemeal



L2 Runaway

Temperature increases above 2 degrees but below 4 degrees.

Australians have had to adjust their lives. Adaptive leadership has had to step forward.

Super El Ninos now near-permanent feature of Pacific ocean currents. Once 3 degrees passed, inexorably rise to 4 degrees then to 5 degrees.

Up to 50 percent of Earth's surface with unique climates is vanishing.

All Australia's capital cities experiencing increases in 35+C days and extreme weather days are now much more frequent than before.

Coastal zones are constantly changing. At over 3 degrees only the extreme northern parts of Tasmania can support significant agricultural production.

S4 Skills Leave

All skills are leaving Australia. No benefits for anyone with skills to remain in Australia.

Whether skills are acquired in Australia or imported, they leave.

A vicious circle has been created: there is no one to go into teaching and training positions either.

C4 Return to 2001

Australia's terms of trade collapses but the rest of the world experiences growth. Resources and energy consumption have been decoupled from economic development and from environmental deterioration.

Very bad news for Australia's terms of trade.

Australian economy is falling further and further behind the rest of the world.

Community

A2

Australians are re-connecting across communities.

Relationships are nurtured, employers have high regard for employees. workplaces are team oriented characterised by cooperation, and partnership based dialog. Cooperation, sharing, and taking responsibility are valued.

Diversity and equality of opportunity is an important to success.

Leadership is by the people, with the people.

Best possible training and education for safety and health.

P1 Piecemeal

Little or no integration or cooperation between levels of government. But small pockets of real governance and real leadership here and there.

Leads to local solutions unless issue extends across boundaries. The pockets of real leadership demonstrate innovative thinking and cooperative action.

Meet Demand and Targets

Energy demand changes with population and wealth.

Energy supply meets demand, but only to the extent that GHG emissions are maintained at or within the set targets (whatever they may be).

Hence energy production must come from right mix of energy sources.

GHG targets change so energy production and consumption must adjust. Targets change when they are found to be insufficient.

Relatively large target changes produce step changes in the supply and use of GHG producing sources of energy.

Workshop Handout **Sectors and Factors**

Project 2.7 Leveraging R&D for the Australian Built Environment



Scenario 3









Attitudes

A3

Order and



Е

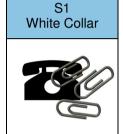
Policies/Governance P3

Energy

E3 Scarcity

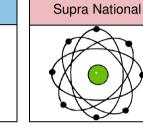












Really Tough

Temperature increases above 4 degrees.

Australians have lost the ability to adapt - they're just chasing their tails. The world is for the most part unrecognisable from the world of 2011. The GHG chain reaction is flipping Earth into a new greenhouse state. Rain forests gone, new deserts and expanded, new monsoonal areas. The weather is dramatically more extreme.

Inland temperatures are more than 10 degrees higher.

White Collar

Perceptions are that a job is an educated job.

it sufficient to obtain a university degree in order to be employed.

Careers in the trades and STEM disciplines are not sought after. When skills gaps occur, employers import people with the required trade or STEM skills.

Employers only train employees on basic work skills: no skilling up or growing talent internally.

C3

Shock Collapse

Australia's terms of trade collapses and the rest of the world experiences ever lower growth.

Europe and America's fragile financial markets have not recovered from the depths of the 2008 global financial crisis

Consequently China's exports have slowly dried up too.

Similarly for other developing countries. Australia's resources export volumes reduced to a trickle.

Terms of trade into negative territory.

A3

Order and Security

Strong leaders bring order to a world that is very chaotic and uncertain. Australians have a master plan that sets out clear directions that give hope. Benchmarking processes help to monitor progress, then become standard practice with the knowledge captured in systems guides. Leaders have authority to expose criminals and limit fraudulent activities. Enforce order to provide a prosperous future to future generations. Government provides for all that people need to live decent and secure live. access to resources and a safety net.



Supra National

Top-down governance from supranational governance sources. The Australian governments at all

levels are enacting their local duties but it is the global governance systems that are driving local priorities.

Global governance systems determine directions, priorities, strategies and set constraints.



Scarcity

Australia is not meeting global greenhouse gas emissions targets. As a consequence the world has imposed sanctions on Australia. Australia must demonstrate verification that exports meet strict requirements of low carbon content.

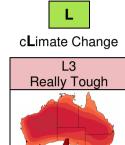
Australians are ignoring targets and are meeting their energy demand from both clean and green energy sources as it suits them.

Workshop Handout **Sectors and Factors**

Project 2.7 Leveraging R&D for the Australian Built Environment



Scenario 4





C



Е

S2

e**C**onomy

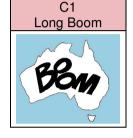
Attitudes

Policies/Governance

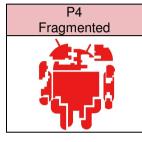
Energy

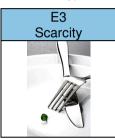












Really Tough

Temperature increases above 4 degrees.

Australians have lost the ability to adapt - they're just chasing their tails.

The world is for the most part unrecognisable from the world of 2011. The GHG chain reaction is flipping Earth into a new greenhouse state. Rain forests gone, new deserts and

expanded, new monsoonal areas. The weather is dramatically more

Inland temperatures are more than 10 degrees higher.

S2

extreme.

Gold Collar

For conditions of high road employers and employees with mix of trades and STEM skills.

The education system has been reformed considerably.

Completely reorganised work and jobs configurations.

Work environments are characterised by high innovation.

High mobility between trades and services since workers are able to take up opportunities wherever they present.



Long Boom

Australia's terms of trade only slowly declines from it's heights of 2011. China and India continue to experience improvements in living standards as a result of industrialisation.

With this comes increased domestic consumption.

This continues fuelling the demand for Australian resources and hence a high terms of trade figure for Australia. Other developing countries continue to struggle under high debt levels. They are just kicking the ball along hoping their economies will recover.



Community

Australians are re-connecting across communities.

Relationships are nurtured, employers have high regard for employees. workplaces are team oriented characterised by cooperation, partnership based dialog and tasks are mastered together.

Cooperation, sharing, and taking responsibility are valued.

Diversity and equality of opportunity is an important to success.

Leadership is by the people, with the people.

Best possible training and education for safety and health.



Fragmented

At the governance levels there is little interest in cooperation.

But it is still possible to do things and lead productive lives.

There is little or no recognition, in governance terms, of the whole. Government is atomised, providing for local solutions only.

Previously regional, global and national structures have disintegrated.

Many independents are elected but it is very difficult if not impossible to find agreement.



Scarcity

Australia is not meeting global greenhouse gas emissions targets. As a consequence the world has imposed sanctions on Australia. Australia must demonstrate verification that exports meet strict requirements of low carbon content.

Australians are ignoring targets and are meeting their energy demand from both clean and green energy sources as it suits them.