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TRANSFORMING AUSTRALIA:

SDG PROGRESS REPORT

Technical Note

Methodology for the Transforming Australia 2024
assessment

Technical Note - Methodology for the Transforming Australia 2024 Assessment

The 2024 Transforming Australia SDGs Progress Report builds on the indicator set and methods developed in previous reports which have been peer reviewed^[1]. The inaugural Transforming Australia 2018 report ([TA 2018](#)) provided a comprehensive baseline assessment of Australia’s progress on all 17 SDGs, addressing 86 priority targets and 144 indicators. The second report ([TA 2020](#)) provided an updated report card on Australia’s progress on the SDGs leading into the COVID-19 crisis in 2020, focusing on 56 priority indicators. It also evaluated the impact that COVID-19 had on Australia’s ability to achieve the SDGs by 2030, drawing on available data and evidence.

The 2024 SDGs Progress Report provides: 1. An updated assessment of Australia’s progress towards 80 SDGs indicators with target values for 2030 including an assessment of long-term and short-term trends, and 2. A forward-looking modelling analysis of future opportunities that could boost Australia’s progress on the SDGs by 2030 and 2050 (**Figure 1**).

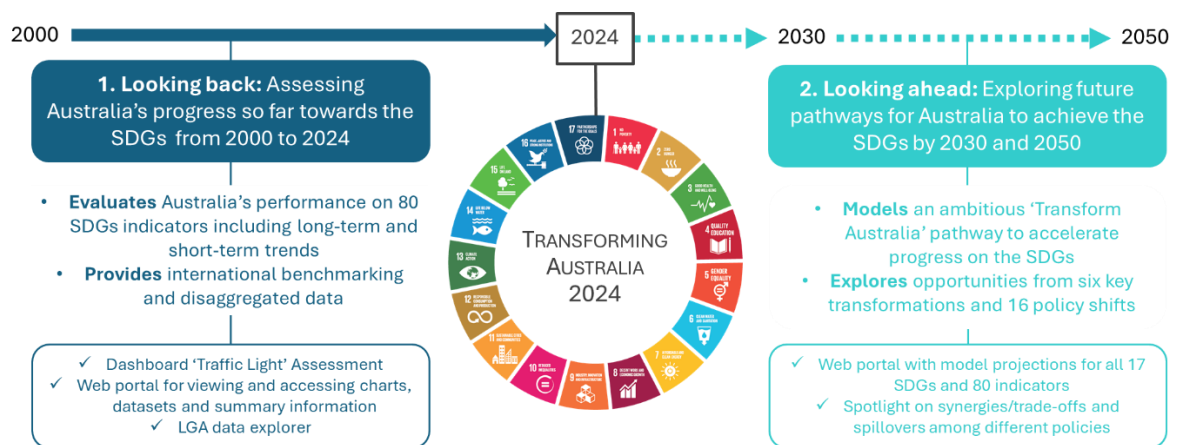


Figure 1. Approach for the 2024 Transforming Australia SDGs Progress Report

1. Methods for assessing Australia’s progress towards the SDGs

Important methodological considerations for the assessment relate to the selection of indicators, the setting of 2030 target values, and the methods applied to evaluate progress towards the SDGs and allocate ‘traffic signals’. In all cases, decisions were made by the project team drawing on advice from additional experts.

1.1 Selection of Indicators

The first TA assessment conducted a rigorous and consultative process to select a large set of 144 priority indicators for Australia. This was led by the National Sustainable Development Council and expert advisers (Goal Leads) based on consideration of several important factors, including their importance for Australia’s sustainable development, relevance to the global SDG framework, and data quality, timeliness and reliability. The aim was to find an appropriate balance between reporting on the official SDG framework, while at the same time assessing the key areas of importance for Australia. The selection of targets and indicators was facilitated through several meetings of the National Sustainable Development Council and stakeholders in late 2017 and early 2018 as well as a national summit in late 2018.

The TA indicators strike a balance between reporting on the official SDG indicators, as well as complementary indicators of critical importance and relevance for Australia. Other factors such as data availability and quality were also considered during this process. **Figure 2** provides a decision tree outlining the process adopted. All indicators used in the assessment are linked to a specific SDG target and goal.

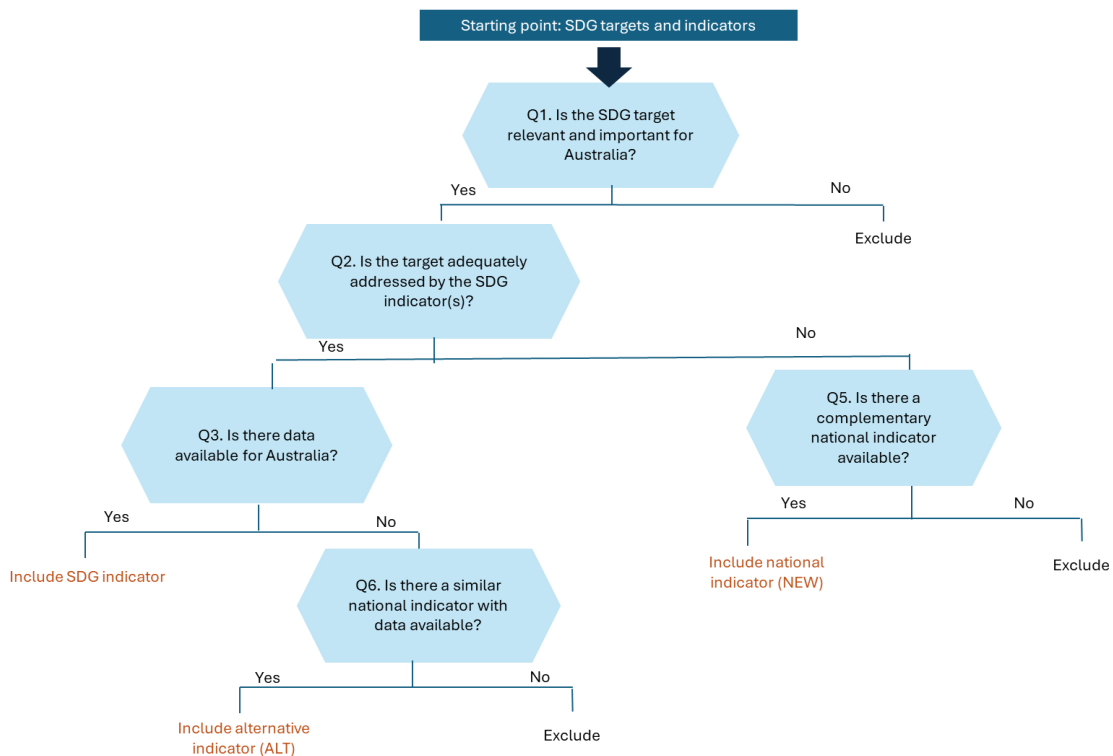


Figure 2. Decision tree for selecting indicators for the first TA SDGs assessment in 2018

The differentiation between SDG and national indicators is made using indicator numbers and labels. In all instances, the official SDG target and indicator numbering is used. Three types of indicators are reported:

- **Official SDG indicators:** these are the exact indicators taken from the SDG framework and are designated using the official indicator numbering used in the 2030 Agenda (e.g. 1.2.1, 7.2.1 etc.)
- **Alternative SDG indicators (ALT):** these indicators are variations on the original SDG indicator where it was necessary to adapt the indicator slightly to align with Australian datasets and reporting. These are designated using the official indicator numbering plus an ALT extension (e.g. 2.2.2.ALT, 4.3.1.ALT, etc.). Where there is more than one ALT indicator for a specific SDG indicator, numbering is also added (e.g. 6.4.1.ALT1, 6.4.1.ALT2 etc.).
- **Complementary national indicators (NEW):** these indicators are new indicators selected to complement the set of SDG indicators due to their high importance and relevance for reporting on a particular SDG target in the Australian context. These are designated using the official target numbering plus a NEW extension (e.g. 1.3.NEW). Where there is more than one NEW indicator for a specific target, numbering is also added (e.g. 3.4.NEW1, 3.4.NEW2, 3.4.NEW3 etc.)

The broad framework of 144 indicators used in the first TA assessment provided the starting point for subsequent TA assessments. However, these have become more targeted over time, focusing on a reduced set of priority indicators to manage the overall scale of the assessment. For the 2024 assessment, a set of 80 priority indicators were selected from the broader indicator set based on the following criteria:

- Relevance for Australia’s sustainable development given current policy priorities and context including complementarity with Australia’s Measuring What Matters wellbeing framework
- Availability of updated time series data since the TA 2020 assessment
- Balance of economic, social, environmental issues and balance across the 17 SDGs.
- Availability of target/benchmark values
- Relevance for key SDG transformations identified by experts^[2]

The final set of 80 indicators used in the 2024 TA assessment is well-balanced across the economic (26 indicators), social (27 indicators) and environmental (27 indicators) dimensions and includes at least three indicators per goal.

1.2 Selection of 2030 Target Values

The TA 2024 assessment includes 2030 target or benchmark values for Australia for all 80 indicators. The 2030 target and benchmark values used in the assessment were selected based on available evidence and the following decision process (in order of preference):

- Numerical SDG targets from the official SDG framework;
- Existing national targets, for example from the Council of Australian Governments (COAG) or national strategies;
- Targets set by the National Sustainable Development Council (NSDC) for the 2018 assessment;
- Targets/benchmarks sourced from other global and regional assessments of the SDGs, including the Sustainable Development Solutions Network’s global SDG Index or United Nations publications;
- Targets/benchmarks based on a comparison with top-performing peer countries (e.g. an average of OECD top five performing countries) or optimal historical performance;
- Benchmarks set based on a steady improvement on the 2015 baseline value of 1% per annum to 2030 (using a compound annual growth rate).

1.3 Method for Assessing Progress and Compiling Australia’s SDG Performance Dashboard

As used for TA 2020, the quantitative method for assessing progress combines an analysis of time series data and 2030 target values for each indicator. Conceptually, the historic trend in data observed for each indicator is compared against the theoretical trend that would be needed to achieve a quantitative target in 2030 – or a theoretical ‘Target Path’. This allows for an easy visual comparison on how Australia is tracking for each indicator. In simple terms, a quantitative comparison is made between Australia’s actual progress and the progress that would be needed to reach the 2030 target, which is expressed as a percentage of progress. The results are then interpreted using a set of traffic light symbols (●●●●) which provide a dashboard assessment of how Australia is tracking on each indicator/target (**Figure 3**).

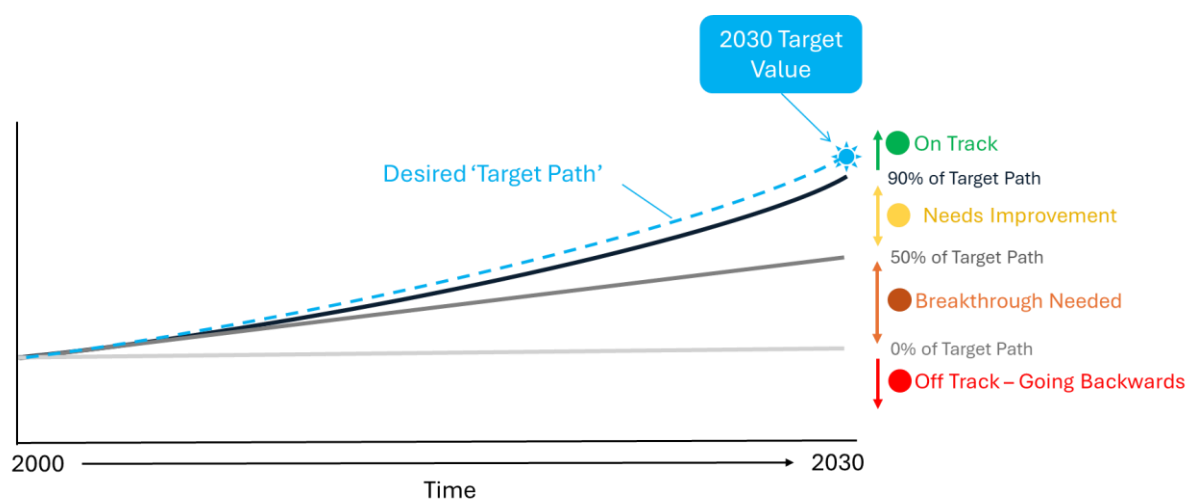


Figure 3. Conceptual diagram of the theoretical ‘Target Path’ and threshold values for assessing indicators and allocating traffic lights (example of a target that requires the indicator to increase)

Where available, datasets for the indicators commence in 2000 up until the latest available year. The assessment of trends is based on the ‘compound annual growth rate’ (CAGR) formula, which assesses the pace and direction of the evolution of an indicator. This formula uses the data from the first and the last years of the analysed time series to calculate an average annual compounded rate of change (%). To assess progress, the actual rate of change of the indicator based on the observed CAGR (1) is compared against the desired rate of change that would be required to meet the specified target value in 2030 (or the

‘theoretical target path’ in **Figure 3**). This comparison calculates a ratio (R) by dividing the observed rate (CAGR_O) by the desired rate (CAGR_D) (2).

$$(1) \quad CAGR = \left(\frac{X_t}{X_{t0}} \right)^{\frac{1}{t-t0}} - 1$$

$$(2) \quad R = \frac{CAGR_O}{CAGR_D}$$

Table 1 below provides a description of the thresholds used for evaluating the calculated ratio (R) and allocating the traffic light symbols as per **Figure 3**. One of four assessment results is possible for each indicator: ‘On Track’, ‘Needs Improvement’, ‘Breakthrough Needed’, and ‘Off Track – Going Backwards’.

Table 1. Approach and thresholds for assessing trends of indicators with quantitative targets

Traffic Light Symbol	Ratio of actual and required growth rates
On Track (●)	Latest value is better than target, or >90% of the desired rate of change (compound annual growth rate or CAGR) needed to meet the target.
Needs Improvement (●)	50-90% of the desired rate of change (CAGR) to meet target
Breakthrough Needed (●)	0-50% of desired rate of change (CAGR) to meet the target
Off Track – Going Backwards (●)	Latest value is worse than target value and observed rate of change (CAGR) >0% in wrong direction.

For the dashboard, the progress assessment for each indicator evaluates both the long-term trend (from 2000 to latest data point) as well as the short-term trend (last 5 years of data), where available. The assessment incorporates the most recent data available for each indicator, with 30% of indicators updated to 2023 and 21% to 2022. However, 28% of indicators rely on data from 2020 and 2021, as more recent updates have not yet been released by their respective sources.

In a few instances, benchmark values are used for indicators where the use of a target is not intuitive (e.g. relating to levels of debt). In these few instances, the assessment considers Australia’s performance in relation to a benchmark (e.g. better or worse) and the analysis of the trend (improving/worsening/stable) to assign a traffic light symbol.

1.4 Data disaggregation and international benchmarking

The results for the 2024 TA SDGs Progress Report are presented through the web portal (<https://www.monash.edu/msdi/initiatives/transforming-australia>). Where available, additional datasets are presented to disaggregate national averages (e.g. by gender, income, remoteness, etc.) and to provide international benchmarks for peer countries. In addition, international benchmarking is included where data is available using the same set of 14 peer countries from the OECD which were selected based on similar development characteristics: Canada, Denmark, Finland, France, Germany, Japan, Rep. of Korea, Netherlands, Norway, New Zealand, Sweden, Switzerland, United Kingdom, and United States of America. The average for all OECD countries is also displayed where available.

1.5 Mapping of the TA indicator framework and the Measuring What Matters indicator framework

An important recent development since the previous TA assessment in 2020 is the government’s Measuring What Matters (MWM) initiative which has five themes (health, secure, sustainable, cohesive, prosperous), 12 dimensions and 50 indicators to monitor and track progress on wellbeing over time. The original framework developed by Treasury in 2023 included 74 metrics, while the 2024 update comprises 77 metrics (with three new environmental indicators).

The indicator frameworks for the TA SDGs assessment and the MWM wellbeing assessment were mapped to identify areas of overlap, gaps and complementarity. Overall, around one third of the indicators from

the 2024 TA SDGs assessment are included in the MWM framework (**Figure 4**). A further quarter of indicators are considered similar metrics or slight variations. Around 43% of the TA SDGs indicators do not have a comparable metric included in the MWM framework. In terms of thematic areas, the main gaps relate to SDG 2 (food security), SDG 6 (water), SDG 7 (energy), SDG 14 (marine biodiversity) and SDG 17 (partnerships) (**Figure 5**). Overall, the MWM wellbeing framework includes strong representation of social issues, with less emphasis on economic issues and, in particular, environmental issues (**Figure 6**). This highlights some key distinctions between monitoring frameworks for sustainable development (SDGs) and wellbeing (MWM).

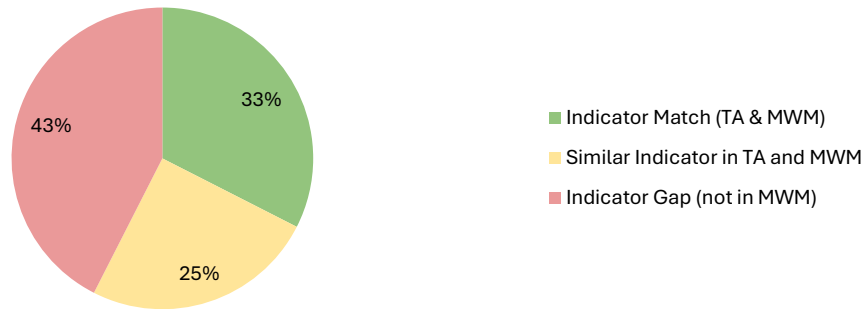


Figure 4. Comparison of the TA SDGs indicators (80) and the MWM indicators/metrics (77) - % of TA SDGs indicators

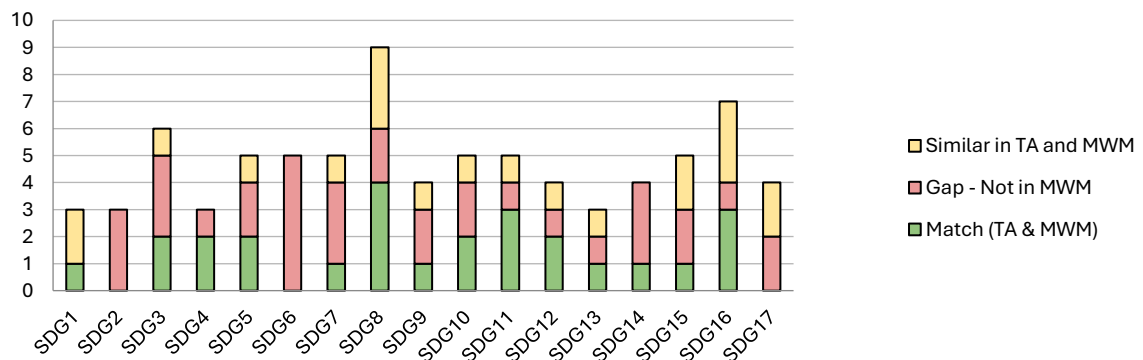


Figure 5. Comparison of the TA SDGs indicators (80) and the MWM indicators/metrics (77) by goal – number of TA SDGs indicators

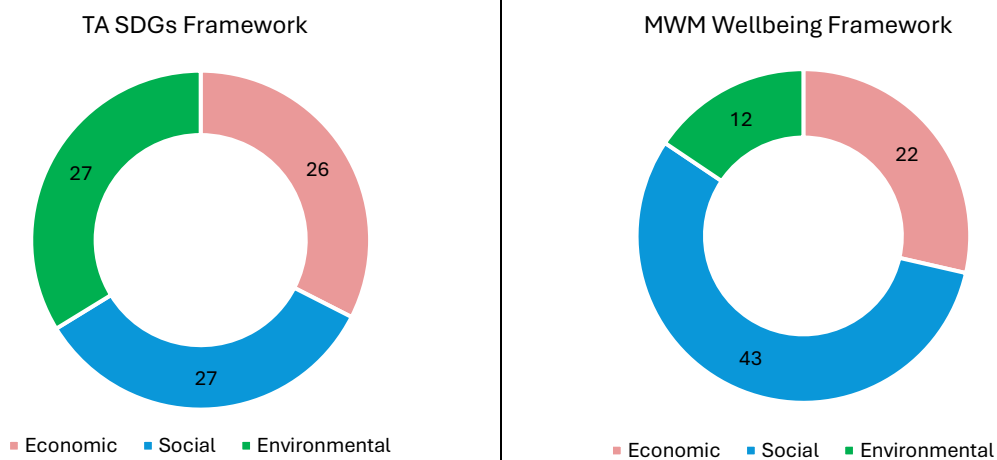


Figure 6. Coverage of economic, social and environmental dimensions – number of indicators

2. Method for modelling future pathways to accelerate Australia’s progress on the SDGs by 2030 and 2050

The study design and methods for modelling future pathways for Australia are based on peer reviewed scientific research published in *Nature Communications* [3] and are summarised briefly here. The modelling aimed to explore two alternative post-COVID-19 recovery pathways for Australia (**Figure 7**). A **Business-as-Usual Pathway** is used as the baseline, assuming a return to pre-COVID policies and expenditure and level of effort to achieve the SDGs. Contrasting this is a **‘Transform Australia Pathway’** which includes an ambitious mix of policies to accelerate six key transformations in Australia - in wellbeing, a sustainable economy, and food, energy, urban and natural systems. The alternative pathways begin to diverge in 2021 as different policy settings and assumptions are introduced.

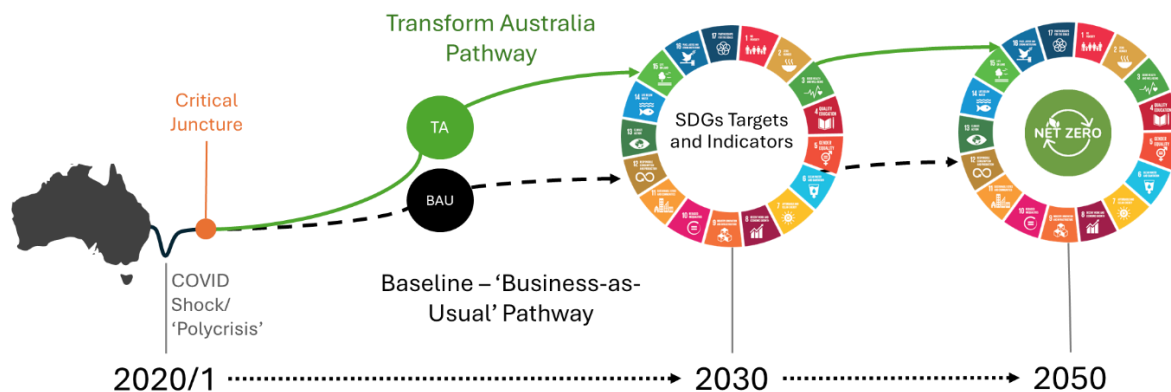


Figure 7. Modelling of two alternative future pathways for Australia and their implications for the SDGs and net zero

Each pathway includes a range of assumptions for policy settings (e.g. investment in education, renewables, environmental protection etc.) as well as exogenous drivers that could impact future outcomes (e.g. future global temperature change, climate change impacts, trade etc.). These assumptions are documented and incorporated into a system dynamics simulation model (iSDG-Australia)^[3-5] from the Millennium Institute which has been adapted and calibrated for Australia and used to make future projections to 2030 and 2050.

These future projections are evaluated in terms of the impacts on the SDGs including 80 different indicators with target values for 2030 and 2050. The modelling calculates the percentage of progress made by each pathway towards each target as well as the average progress towards each of the 17 goals (i.e. by averaging results for the targets associated with each goal) and towards all goals (i.e. by averaging the results for all 17 goals). As ‘net greenhouse gas emissions’ is one of the indicators assessed, we can also evaluate progress made by each pathway towards net zero. Finally, the robustness of these projections is also tested to quantify and explore the implications of future uncertainty on the model results (e.g. in relation to geopolitical uncertainty, trade outlook, climate change impacts etc.) [3].

2.1 The Transform Australia Pathway – Six Transformations and 16 Policy Shifts

The Transform Australia Pathway assumes that a pervasive narrative emerges in Australia around the need for structural change and to ‘build back better’ using the SDGs as a roadmap. This gains support from powerful actors and coalitions which legitimizes stronger policy action to accelerate six key transformations to accelerate progress towards the SDGs. The **six transformations** (**Figure 8**) are based on global research that identifies six entry points with the greatest potential to achieve the SDGs [2, 6]. Each transformation includes an ambitious package of SDGs policies from 2021 to 2030, beyond which policy settings return to trend except for net zero policy assumptions which are continued to 2050. The Pathway comprises **16 policy shifts** across the six transformations (**Figure 8**). The ambitious SDGs policy package is intended to generate a period of accelerated progress to 2030, while longer-term settings ensure consistency with achieving net zero targets.

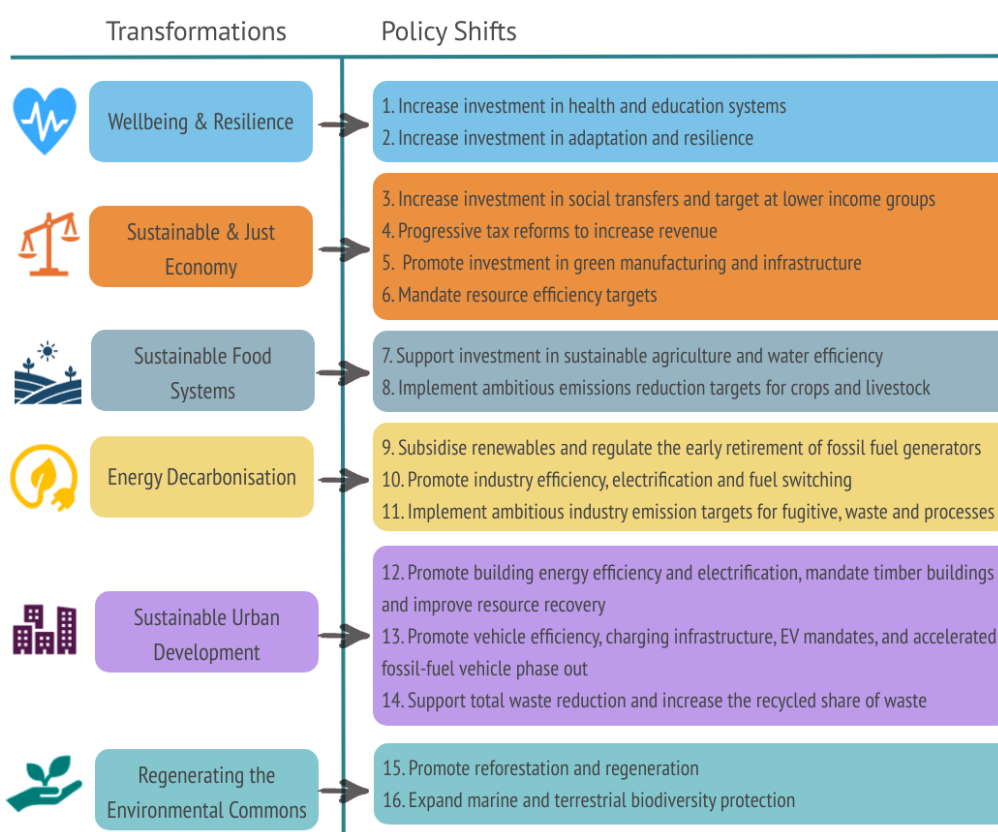


Figure 8. The ‘Transform Australia Pathway’ – six transformations and 16 policy shifts

2.3 Transformation Narratives

A key assumption in the modelling is that governments act to introduce the ambitious new policies and other actors invest in sustainable solutions and alternative practices. A narrative storyline therefore accompanies the quantitative policy settings and assumptions for each transformation^[3]. The narratives explain the processes and mechanisms that create favourable conditions for the successful implementation of ambitious new policies and interventions which accelerate each transformation. A brief synopsis of the storyline for each transformation is provided in **Table 2**.

The storylines incorporate insights from socio-technical analysis^[3] of key impediments and emerging opportunities and seeds of change associated with each transformation. These vary between systems and can result from large sunk investments which create vested interests, economies of scale which challenge new market entrants, lifestyles which become organised around unsustainable practices, and policy settings and networks which favour incumbents or stifle innovation. Policymakers can become captured by vested interests, tied up by lobby groups, or lack the capacity, resources and incentives to act. Important conditions for overcoming inertia result from a range of sources and societal actors. These include changing external pressures from the maturation of emerging innovations which provide solutions that policymakers can push, shifts in public opinion and pervasive narratives, coalitions that organise actors towards new goals, and support from powerful actors and policy entrepreneurs. Shocks, crises and slow-moving trends can generate instability in existing systems, creating windows of opportunity for systems change.

Table 2. Brief overview of the six transformations storylines

STORYLINE
<p>T1. Human wellbeing and capabilities Following COVID-19, governments and societal actors commit to upgrading Australia’s health and education systems to build back better and ensure that Australia is well-placed to respond to future shocks. Acute public awareness of the health and</p>

education system failings and growing concerns around natural disasters builds public support and momentum for increased investment in resilience and health and education systems reforms. This is supported by changes in the way that public expenditure is screened and allocated based on wellbeing. The adoption of systems approaches leads to the development of a National Preventative Health Strategy which effectively brings together partners across all levels of government and healthcare providers, professional associations, industry, NGOs, First Nations groups, and individuals. This builds momentum for change, shifts the narrative towards preventative health, and builds public support for new investment and reforms. The rapid emergence and scale-up of digital technologies also provide greater accessibility to services.

T2. Sustainable and just economy

Multiple crises bring the rising cost of living pressures, government debt, persistent poverty rates, and rising inequality into sharp focus with increased media coverage raising public awareness and community support for action. This creates the burning platform needed to pressure governments and unite stakeholders to embrace much-needed tax reform and to consider new ways of prioritising government investments. Successes in neighbouring and like-minded countries encourages wellbeing initiatives in Australia, leading the federal and state governments to adopt wellbeing budgets to screen major public expenditure. Tax reforms provide finance to support all six transformations, including increased social transfers and new investment in infrastructure for green hydrogen and manufacturing industries. Public and government pressure aligns private capital with wellbeing objectives and the SDGs along with divestment from unsustainable industries. This builds momentum over time for economy-wide regulations and standards which place stricter controls on pollution and emissions.

T3. Sustainable food systems

The bushfire devastation, unprecedented floods and COVID-19 shine a bright light on the extreme shortcomings in Australia's food system. A regenerative agriculture movement gains momentum with impetus from popular books and films and support from powerful actors. Emerging business models such as farm to table distributors, the proliferation of local farmers markets and changing preferences for healthy diets and organic produce support momentum for change. Many emerging technologies begin to disrupt the food system and provide viable alternatives that are pushed by governments, business and civil society. Shifting narratives and values around healthy diets and lifestyles begin to erode support for current incumbent firms, with people seeking out local farmers markets and delivery alternatives. Over time, governments and stakeholders reach a shared agreement on the desired characteristics of a regenerative future food system. Governments provide new incentives, extension services and financing options to support farmers to adopt regenerative practices leading to ever-greater numbers of farmers practicing agroecology over ever-larger territories, and which engages more people in the processing, distribution, and consumption of agroecologically produced food.

T4. Energy decarbonization

Following the Black Summer bushfires and unprecedented floods, public support for action on climate change reaches new levels and powerful actors call for a green recovery from COVID-19. Bottom-up political movements and collective action see a shift in politics away from the status quo in support of decisive policy on climate change, disrupting incumbents and providing a window of opportunity to end the climate wars. A powerful coalition of politicians, business, community and unions agrees on shared ambitious mitigation targets for Australia, supported by a clear plan for investments needed over the next 10 years to accelerate the transition towards 100% renewables. Longer-term plans are developed to reduce demand and tackle emissions in hard-to-abate sectors. Stakeholder activism and divestment and hostile takeover of fossil fuel assets by powerful actors result in an accelerated phase out of fossil fuel generation. Investment in R&D results in continued technology advancements which provide solutions that policy makers can push over the longer-term to support net-zero shifts in harder to abate sectors including long-haul transport, aviation, agriculture, and industry.

T5. Urban development

Home to many economic, political and cultural leaders and powerful actors, cities set about driving changes to corporate behaviour and turning up the heat on state and federal governments. Building on local initiatives, a national framework of local visions and plans are developed and tailored for each city including ambitious goals and targets aligned with the SDGs. This improves community and sectoral buy-in, guiding policy measures, generating investments, and raising awareness. Targets and plans support rapid decarbonisation over the next few decades and coherent policies across sectors backed by investment and incentives from all levels of government in social housing, electrification of buildings, circular economy and waste reduction, local food systems, behavioural change towards sustainable diets and lifestyles, and the electrification of transport and charging infrastructure.

T6. Environmental commons

Through the COVID-19 lockdowns, an increasing appreciation for nature emerges as people seek the great outdoors for relaxation and recreation and thousands relocate from major cities to regional areas. Building on the experience in the latest State of Environment report, a more holistic understanding of Australia's environment is enabled which feeds through to new partnerships to manage Australia's natural assets. Connections between people and country, between the economy and the environment, and between western scientific and Indigenous knowledge systems begin to flourish, with stakeholders in government, business, research, and civil society working together to deepen these connections and build a shared vision for a nature-positive society and economy, guided by science-based targets aligned with the SDGs and other global frameworks. This is supported by transformations in food systems, dominant patterns of production and consumption, energy decarbonisation, and urban systems.

2.4 Modelling the alternative future pathways and progress towards the SDGs

The modelling was undertaken with an integrated, macroeconomic system dynamics model for Australia (*iSDG-Australia 2.0*) developed with the Millennium Institute which is based on a stock-and-flow structure and formulated as a set of differential equations encompassing 3000+ variables organised across 31+ economic, social, environmental modules. A description of each of the sectoral modules along with key assumptions and source literature is available in the model documentation^[5] and a brief summary of the model structure is provided in **Figure 9**.

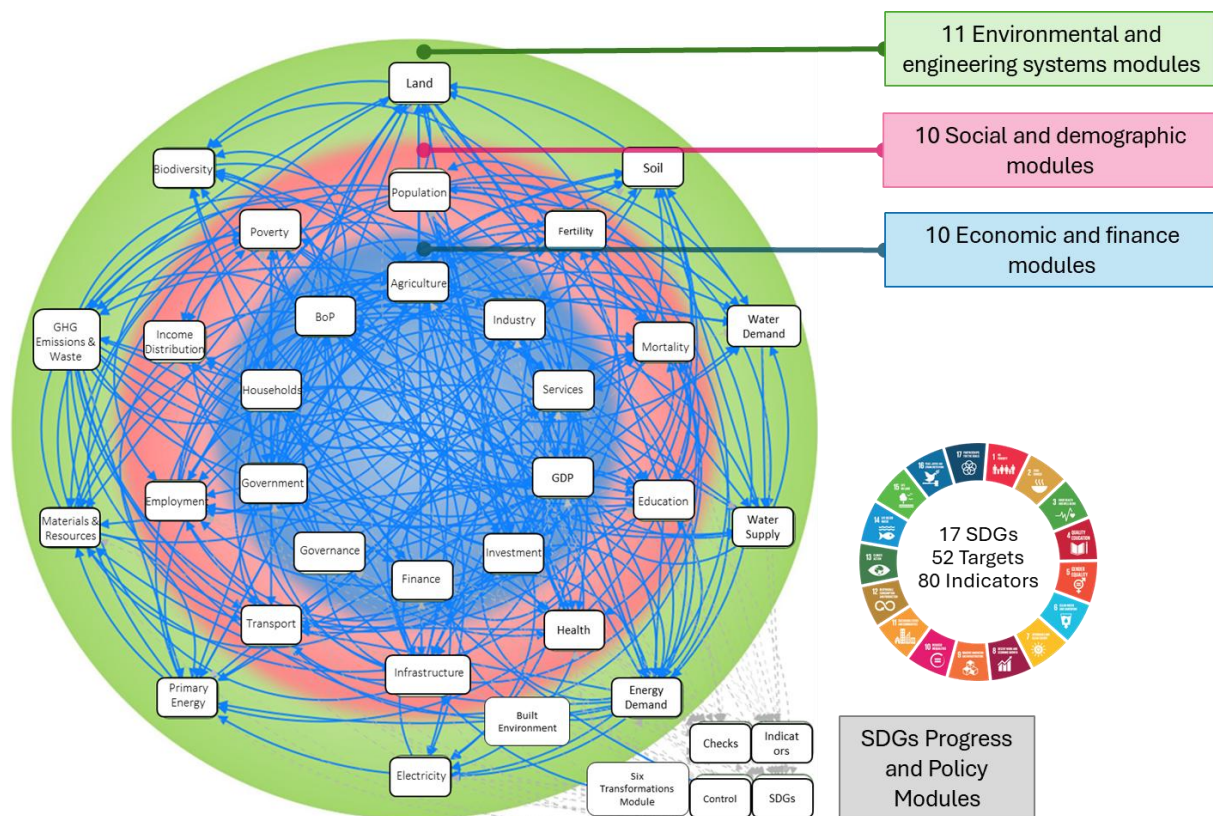


Figure 9. Overview of the structure for the iSDG-Australia system dynamics model

The model is calibrated on an extensive database of 25-30 years of historic time series data commencing in 1990 and sourced from official and verified national government sources (Australian Bureau of Statistics and government administrative databases), as well as official data from international databases [3].

Following final calibration of the model, the baseline ‘Business-as-Usual Pathway’ was projected through to 2050 based on a continuation of current policy and expenditure settings at the commencement of the simulation period in 2021. For the ‘Transform Australia Pathway’, policy settings were used to parameterise and project each transformation individually before projecting all six transformations simultaneously as a single aggregated pathway. This enabled an assessment of interactions and potential spill-over effects between the different transformations, for example the positive effects that a transformation towards a sustainable and just economy might have on transforming wellbeing and capabilities. It also enabled an evaluation of the impacts of each transformation on the full suite of SDG targets and indicators, as well as a comparison of individual and aggregate results.

The performance of the two pathways as well as each of the six transformations were evaluated against a set of 80 unique indicators covering all 17 goals in 2030 and 2050. However, due to model limitations, there are some differences between the indicator set used in the modelling and the indicator set used in the TA progress assessment. Across the 80 SDGs indicators included in the model, we classify 23 as economic, 29 as social and 28 as environmental, which provides comparable representation of the three dimensions of sustainable development.

For each indicator in the model, the progress towards each target is simulated over the period from 2016 to 2030 (for 2030 targets), and 2031 to 2050 (for 2050 targets). The projections reveal Australia’s proportional achievement of a target (from 0 to 100%). A normalised scale (0-100) was used, whereby the reference value in 2015 was considered the zero point and the target values for 2030 and 2050 were considered the final points (reflecting % progress). Average performance on the SDGs targets is aggregated firstly at the SDG target (for 52 targets) and then goal level (for 17 SDGs) so that each goal contributes equally to the overall SDGs performance regardless of the distribution of indicators.

2.5 Assessing interlinkages and spillover effects between the transformations and the SDGs

The very broad scope of the system dynamics model combined with the six transformations approach supports a complex quantitative analysis of feedbacks and interlinkages across different systems and targets. To assess the interactions from one transformation to another, each transformation is given a unique set of SDGs targets of thematic relevance (e.g. for the wellbeing transformation they include targets relating to health and education). While each transformation is designed to accelerate progress towards its own set of targets, it also has implications or 'spillovers' for the achievement of broader targets associated with other transformations. We explore these interactions by simulating each transformation individually and evaluating their effects on all targets.

In a similar way we also explore the effects of each transformation on the achievement of each of the 17 SDGs. As we are interested in the long-term effects of each transformation, the analysis is done using the projected results for 2050. For the 'Transform Australia Pathway', we calculate the additional percentage point contribution that each individual transformation makes towards the achievement of each SDG in 2050 when compared against the baseline 'Business-as-Usual Pathway'. This enables us to decompose the model projections and allocate a contribution made by each transformation to additional progress towards the SDGs.

References

- [1] Allen, C., et al., *Assessing national progress and priorities for the Sustainable Development Goals (SDGs): experience from Australia*. Sustainability Science, 2019. 15: p. 521-538 DOI: <https://doi.org/10.1007/s11625-019-00711-x>.
- [2] IGS, *Global Sustainable Development Report 2023*. 2023, United Nations: New York
- [3] Allen, C., et al., *Modelling six sustainable development transformations in Australia and their accelerators, impediments, enablers, and interlinkages*. Nature Communications, 2024 DOI: <https://doi.org/10.1038/s41467-023-44655-4>.
- [4] Allen, C., et al., *Greater gains for Australia by tackling all SDGs but the final steps will be the most challenging*. Nature Sustainability, 2019. 2: p. 1041-1050 DOI: <https://doi.org/10.1038/s41893-019-0409-9>.
- [5] Millennium Institute, *iSDG Model Documentation*. 2022, Millennium Institute: Washington D.C. <https://isdgdoc.millennium-institute.org/en/index.html>
- [6] Sachs, J.D., et al., *Six transformations to achieve the sustainable development goals*. Nature Sustainability, 2019. 2(9): p. 805-814 DOI: <https://doi.org/10.1038/s41893-019-0352-9>.