

# IS THE FUTURE OF AUSTRALIA'S ECONOMY ... CIRCULAR?

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## THE WORLD WE LIVE IN

According to the World Economic Forum (1) the world population of 7.2 billion people are experiencing the 4th Industrial Revolution which is evolving at an exponential pace. The use of new technologies across all kinds of fields and the emergence of the middle class around the world continue to create new consumers which are now able to afford novelty products and services that increase the efficiency and pleasure in their lives. As a result, global consumer demand is leading towards historical high level (2). The consequences of these developments however are unseen: 1.18 billion tonnes of garbage are created per year and estimates suggest that overall waste production continues to rise.

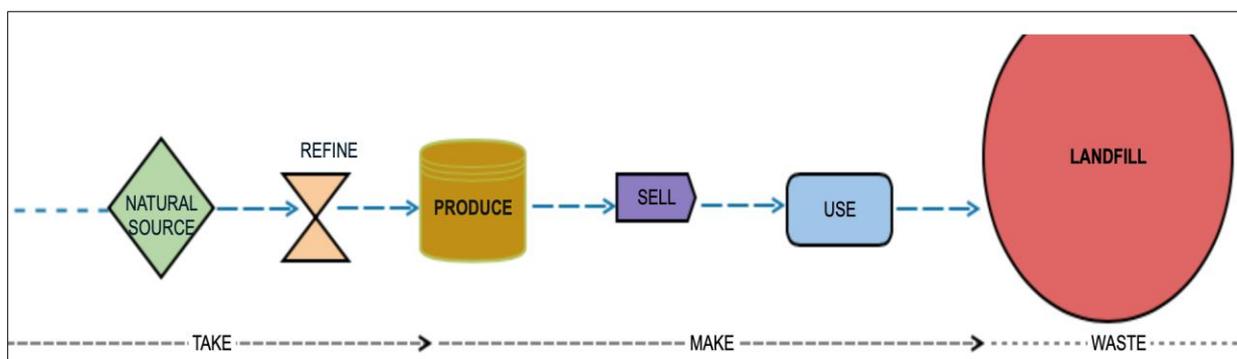
In this context, waste management *seems* to be a challenge for all communities given the increasing existence of unwanted stuff across the globe. In order to respond to this challenge, the Australian Federal Government created in 2018 a National Waste Policy which *seems* to address the issue until 2030 (3). However, other governments around the world are committed to fully eliminate waste rather than manage it. The issue raises the following question: how is this possible in the context of the 4th Industrial Revolution? The answer is a *new* (1970) Economic Mainstream: the Circular Economy.

For the last couple of centuries of Industrial Revolution, most economies are based in a linear system. This is a three step process: 1- TAKE (Extraction of raw materials from Earth), 2- MAKE (Production of goods and services), 3- WASTE (Disposal after use). This linear process has created an unquestionable mentality of 'take-make-waste' that individuals and governments assume as unique. As a result, they only try to deal with the third phase, the waste, as THE problem. In addition, this linear process takes for granted the availability of natural resources but in contrast, should the current lifestyle persist, the access to natural resources will be limited as population is estimated to reach 9 billion by 2050 (4).

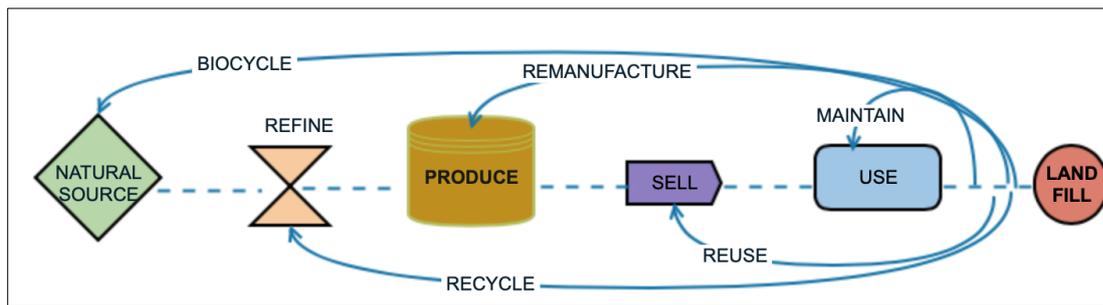
The Circular Economy concept is about redesigning this linear process into a cycle that continuously reuses materials and resources to their fullest potential, where ideally there would not be any waste at all. The aim of the Circular Economy is social well-being while operating within the boundaries of the Earth (5).

## Infographics (6):

### Linear Economy: Take-Make-Waste.



## Circular Economy:



### THE NATURE OF THE CIRCULAR ECONOMY

Circular Economy is not limited to reduce, reuse and recycle, it is in contrast, a zero waste concept. The Circular Economy is a revolutionary idea that expects humans to live in a holistic economic system that operates cyclically, as natural systems do.

For instance, the perfect example of a natural system is an ecosystem. This is a community of living organisms interacting with the nonliving components of their environment. They are linked together through nutrient cycles and energy flows. Energy enters the system through photosynthesis and is incorporated into plants. By feeding on plants and on one-another, animals move matter and energy through the system. Decomposers break down dead organic matter and release carbon back to the atmosphere facilitating the cycle, so nutrients can be readily used by plants and other microbes.(7)

There are three key concepts in the above definition that have been extracted and incorporated in this article to explain what a Circular Economy is. They are: “nutrient cycle”, “energy flows” and “community of living and nonliving components”.

Firstly, in a Circular Economy there are only two types of materials: disposable and durable. So things are to put back into Nature or to be reused, or recycled. This is a “**nutrient cycle**” because materials are either feeding the land and the atmosphere, or feeding the industries to manufacture new products. In addition, every item of raw material has a purpose in the next step of the circle and it’s destination is clear to consumers and manufacturers.

Secondly, to maintain the sustainability of the system, all kind of energies used throughout the circle process must be renewable. This is how the “**energy flows**” in the Circular Economy.

Circular Economy ensures that renewable, reusable and non-toxic resources are utilised as energy in an efficient way (8), which means that waste could also be turned into energy.

Finally, a “**community of living and nonliving components**” refers to the role that everyone has to play in order to create communal connections amongst people and resources. In a Circular Economy, consumers are users because they do not own the raw materials, they only buy the added value to the products and the performance or service obtained from them. Is the producer who still owns the raw materials and is happy to receive them back when the item is not functional for the consumer anymore. This recycling and remanufacturing processes are the main source of materials for producers, like decomposers in the ecosystem.

As a result, the benefits from a Circular Economy are multiple. For instance, there is a decreased dependency on the natural resources extraction which means significant savings and considerable reduction of waste. Furthermore, analysis by McKinsey estimates shifting towards circularity could add \$1 trillion to the global economy by 2025 and create 100,000 new jobs within the next five years (9).

### THINK GLOBALLY: HOW EUROPE IS WORKING ON A CIRCULAR ECONOMY

The Official Journal of the European Union shows a clear orientation of their economy towards a Circular logic, based on “End-of-waste” rules. They are focused in the phase of innovation, design and development of new products and industries with high level of resource efficiency. Furthermore, by 2035 their target is a minimum of 65% of waste to be prepared for reuse and recycle and countries such as Holland, are planning to be 100% circular by 2050.

The first of the 67 articles of the European Official Journal (10) says: "Waste management in the Union should be improved and transformed into sustainable material management". In order to do so, the EU members are encouraged to promote the development, production, marketing and use of products that contain recycled materials, are durable, multi-use, repairable, suitable to be reused and recycled.

The most relevant policies involved are:

- Incentives for research and innovation in advanced recycling technologies and remanufacturing.
- Creation of schemes which establish extended financial and organisational responsibility of waste (end-of-life) to the producers.
- Charges and restrictions for the landfilling and incineration of waste which incentivise waste prevention and recycling, while keeping landfilling as the least preferred waste management option.
- Deposit-refund schemes to encourage efficient collection of used products and materials.
- Creation of a reporting system to gather data on the products placed on the market.
- Creation of a reporting system to gather data on the waste generated at production level.
- Public awareness campaigns, in particular on separate collection, waste prevention and litter reduction, and mainstreaming these issues in education and training.

The consequences of these policies are yet to be observed because the implementation of the new system rules are in progress. However, there are some clear and relevant outcomes to consider.

Firstly, producers will be motivated to invest in innovation and design of recycling materials to avoid end-of-life taxes. Secondly, if innovation is delayed or not implemented the end-of-life costs will be transferred into retail prices which will alert consumers pushing them to choose reusable, recyclable and durable products. As a result, the market will eliminate companies which cannot adapt to the "end-of-waste" rules. Thirdly, this panorama will create new employment opportunities, new industries, and sustainable economic growth.

## ARE AUSTRALIAN POLICIES ENOUGH?

The waste policy created in 2018 by the Australian Federal Government is a reaction to China's restriction on importing waste. Even though the policy embraces Circular Economy as a solution, the waste management is still the focus like a palliative relative instead of a real Circular Economy revolution.

The main targets of the Australian Waste Policy (11) are:

1. **Principle:** Reduce the amount of waste.

**Strategies:**

- Coordinated actions between business (better designs and use of resources) and consumers (re-use, repair, recycle).
- Consumer education in waste reduction and recycling.

2. **Principle:** Accelerate the recovery rate of resources.

**Strategies:**

- Improve recycling processes, improve quality of recycled materials.
- Support development of markets for recycling.

3. **Principle:** Increase use of recycled material and build demand and markets for recycled products.

**Strategies:**

- Promote procurement by Government to be sustainable and based on recycled content.
- Promote domestic demand for recycled materials and products.

4. **Principle:** Better manage material flows to benefit human health, the environment and the economy.

**Strategies:**

- Minimize plastic use in packaging to reduce plastic pollution.
- Manage, reduce and regulate chemicals and organic waste.

5. **Principle:** Improve information to support innovation, guide investment and enable informed consumer decisions.

**Strategies:**

- Improve** national waste data, for consumers and producers.
- Improve research and develop market for recycled material.

It is easy to see that these strategies are not as determined as the European ones. The reason is because they depend on voluntary commitment from consumers, businesses and local authorities. While in Europe they are focused on financial incentives to improve innovation in designs and charges to restrict waste, Australia is still dealing with recycling. As a result, Australia's industry could be under risk of not being internationally competitive, dragging a negative impact in the labour market.

In addition, the recycling focus of Australian policies are a short term solution seeking for a local demand to absorb the materials that China has banned. If these policies were truly Circular, then reuse, re-manufacture, repair and biocycle should be taken into account as well.

In summary, these short term policies could be a good foundation towards a Circular Economy but they are not enough to fully implement the idea and unlock its potential. The next challenge for the Australian Federal Government is to adopt strict long term Circular Economy policies. Some examples are: financial incentives for all industries to innovate in better quality products; eco-efficient designs; create new business models and develop new industries; taxes to avoid waste; and to improve public awareness about responsible consumption and waste.

## **ACT LOCALLY: WHAT CAN WE DO TO DRIVE THE CHANGE?**

Australians want to have less waste, landfill and ocean pollution for the well being of future generations. So how can we follow the world momentum and shift towards a Circular Economy?

First change would be as consumers: we need to stop thinking linear. Improve our recycling actions is a good start. Be well-informed consumers for example by knowing the origin and ethical standards of the brands we consume and support better business models. Also, reduce the quantity of consumption and focus on the quality of the products so they can be used for longer and if possible, to have the potential to be repaired.

Promoting "End-of-Waste" benefits and values within the community is a key element to engage people towards a new holistic system.

Inventiveness should come from community members, we need to observe where the local economy is lacking and what opportunities could emerge from that. For example, how could the waste of a business be an input for others? Like in ecosystems where there is no leakage, there are many communities across the globe leading circularity.

In summary, the future of Australia would be circular if we start from acting locally in our community as an intrinsic part of the nation.

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