



ABSTRACT

Circular economy to respond environmental challenge: Package water business case

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Industrial revolution has changed how we make things and how we consume. Since machinery and technology help to produce things in mass scale and in affordable price, new products have been released to the market every day beyond what the consumers need. Resources are extracted heavily from the nature, huge amount of energy are used on the production process, only to come up with products that ends up in the final disposal site shortly after being used. Today, the world eventually realize that the ecosystem can no longer cope with such mainstream, linear economy model, where materials are only following the take-make-waste scheme. Our planet has been heavily burdened with our behaviors and circular economy comes as approachable solution. A circular economy model is based on the principles of designing out waste and pollution, keeping products and materials in use, and regenerating natural systems.¹ It grows the economy by bringing benefit to its people within the planet boundaries. In Indonesia, where around 6.8 million tons of plastic waste is generated per year and is growing by 5% annually; circular economy model has also been projected as one of the key solutions. Compared to linear model, circular economy scenario will avoid the disposal of 66 million tons of plastic into over-burdened landfill facilities from 2025-2040.²

Industrial sector plays a key role on this transformation to circular economy. With their design thinking, industry can change the end-of-life of their products with a restoration, shift towards the use of renewable resources, eliminate the use of unnecessary materials, build the share/reuse/remanufacture/recycle business model as well as cut out waste through better design and quality that allow products to be durable and long lasting. As in industry like food and beverage where packaging is critically needed to maintain the food safety, nutrition and quality of certain products, applying circular economy mindset since the business case development and material selection, will create a significant difference.

Reusable business model for 19-litres water jug is one best example on how circular economy implemented on the packaged water industry. By using type of material that can be reused and providing necessary mechanism for consumers to reuse/refill theirs, it already caters the purpose of keeping plastic material to stay in loop or within the production system. A pollution to the environment thus can be pushed down to almost zero. On the other hand, the use of virgin plastic as non-renewable resources will also be significantly reduced, having it replaced by the same material all over again.

Another effort to implement circular economy within the business is to reduce the newly created material by incorporating recycled content within the packaging. To offtake and use recycled content will eventually add value to the use of recyclable material at the first place. From now on, there is assurance given on its circularity once the used packaging goes for



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recycling. Plastic bottle made from 100% recycled plastic and 100% recyclable,³ which is first produced in Indonesia on 2019, is the solid example of another circular product. Coming from used bottle that being processed and decontaminated, this recycled bottle can be immediately converted into another new recycled bottle by the time it reaches its end-of-life.

To be able to create circularity within the packaging, a thorough assessment on collection and recycling landscape is an important step while designing the product. In Indonesia, although the total recycling rate of plastic below 10%; PET bottle is still categorized as has a high recycling rate (above 50%).⁴ And since not all plastic are the same, such reference is crucial to define what kind of plastic material can be chosen and what type of product that can use the post-recycling materials. This is where industry play a huge role on driving the change. Instead of considering only functionality, cost and expecting the products to be disposed right away so can be replaced by new one; the entire life cycle of its products needs to be studied comprehensively to define how we can keep the value of its material.

Keywords: Circular economy, circularity, recycled

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