

EXECUTIVE SUMMARY

Sebastian Conyers

Waste disposal has been a large problem in not only Nova Scotia, but Canada as a whole. Many methods that have been implemented in the past have yet to achieve the goals needed to reduce our waste to 300kg/person. It is becoming increasingly clear that new, more innovative waste management methods are required in order to see and achieve progress in the waste management systems.

When looking at waste management methods that are currently in use, there are many small scale solutions that could potentially be increased in productivity to help the province. There has been success seen in photoreforming plastic waste into hydrogen, that could in turn be used for a power source.

However often it is the small things that have the largest impact. With increased incentives for the general public to decrease their consumption and increase their self reliance and sufficiency, we could see less waste and an increase in locally produced products.

This new drive towards more modern ideas and technologies is what will help spearhead the increased sustainability and productivity of our waste management system. Learning from not just the countries around us, but from non profit organizations and upcoming teams in the field of waste management and green technology, will help us get ahead on this ever growing problem and achieve the goal of 300kg of waste per person annually by 2030.

Waste Disposal (300kg/person)

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Nova Scotia has a population of approximately 1 million people, making it one of Canada's most densely populated provinces per square kilometer. Nova Scotia, like most densely populated areas around the world, is confronted with the ever-increasing issue of waste disposal.

The average Nova Scotian generates 400kg of waste per year, and while the province claims that the majority of the waste is recycled and reused, our landfills are constantly expanding, and our air quality is becoming increasingly polluted ([Nova Scotia](#)).



Nova Scotia has some of the highest numbers of landfills in the country, with 63 publicly owned landfills in existence, many of which are bordering people's homes and polluting their water and lungs. This system is not only harmful to the environment and our population, but it is also extremely

costly. According to studies, if we continue on our current path, the province will spend more than \$200 million on this system by 2040 ([CBC](#)).

So, what are our options for reducing our waste to 300kg per person? Though living a zero-waste lifestyle would be ideal, it is more of a pipe dream in today's society. We need to consider realistic alternatives that strike a balance between practicality and environmental friendliness.

We must first consider the options before moving on to greener, more modern ideas and possibilities. Incineration, waste compaction, composting, vermicomposting, and, most commonly, landfills are some of the most effective and widely used waste disposal methods ([Byjus](#)).

How environmentally friendly, however, are these options for our planet longterm? Many processes, such as incineration and landfilling, emit numerous harmful byproducts, causing the ozone layer to deplete and contributing to the ever-increasing amount of greenhouse gasses in our atmosphere. With climate change quickly pushing us to the point of no return, the importance of reducing our environmental impact has never been more pressing.

As consumers, what can be done to help us survive and thrive in our environment? Reducing our consumption of single-use items will always be at the forefront of preventative methods; not only does this reduce waste entering our landfills, but it will also result in a lower long-term cost for the average consumer. As citizens of our planet, we must learn to reduce our environmental footprint and become more self-sufficient and sustainable.

What can the Nova Scotian government do now to bring our waste down to the 300kg target? As Yotam Ottolenghi once said, “One man's trash is another man's treasure, and the by-product from one food can be perfect for making another”. With this mindset, we can start reusing our waste rather than simply disposing of it in landfills. Implementing better recycling practices, such as recycling large amounts of plastic, glass, steel, and other materials, will allow us to create new items that can be used by the average person from previously discarded items.

Recently, an increasing number of studies have been conducted to learn how to convert our plastic waste into fuel for the ever-increasing demand for power. Swansea University researchers have discovered a way to convert waste into hydrogen using photoreforming ([Plugandplay](#)).

Turning our plastic waste into energy could truly be the way of the future when it comes to dealing with rising waste as well as increasing demand for energy and jobs. It is estimated that recycled plastic fuel plants could generate over 39,000 jobs and \$2 billion in profit in the United States, so imagine what it could do for Nova Scotia ([Power](#)).

Power generation from waste could be a sustainable solution to many of our problems. When it comes to waste and energy production in Nova Scotia, we could have a perfect circle, just like a healthy ecosystem. We would be using what was once a problem to solve many others, while also solving its own.

Of course, accountability is one of the many challenges for not only governments but also individuals; if there is nothing holding us accountable for these plans, they will be nearly impossible to achieve. There have been methods of accountability implemented in the past, such as the carbon tax, but we need to find more innovative ways to both inspire and drive our populations to move toward greener, healthier lifestyles.

Since the offer of a cleaner, healthier lifestyle with more opportunities is insufficient to persuade some of the population, I believe that increased incentives for consumers who implement healthier lifestyles such as recycling and growing your own food could help increase public awareness. Reduced power bills as a result of the new energy source derived from our waste would lead to an increase in support as well.

Many non-profit organizations have already established funding opportunities for people who want to grow native species in their communities ([Canplant](#)). However, the provincial and federal governments should provide incentives to people who want to create their own small-scale gardens in order to reduce their environmental impact, as growing our own food reduces the need to buy food packaged in single use plastics, According to a study conducted by the University of California, over 40% of plastics in landfills and polluting our oceans are from single use packaging. ([CBC](#)).

The provincial government has gradually changed its practices over the years in order to reduce the amount of waste we produce. The 300kg goal is a great example of this, but promises are often made and never kept. With the rise and fall of political parties, it is often difficult to see a consistent progression of environmental progress. I firmly believe, however, that by educating the general public about both the problems at hand and the potential solutions, there will be a greater demand for these greener methods to be implemented.

As a general public, we must strive to act now, not to set goals for the next 20 years, but to develop ambitious, attainable plans to help us reduce our waste. These actions are required if we are to meet the target of 300kg/person by 2030.

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