

This island is going trash free - by recycling all of its waste

The Danish island of Bornholm has an aging incinerator that will soon need replacement. Instead, the local government is adopting a totally new system.

By **Karen Gunn, 22 April 2019** This article was created in partnership with the National Geographic Society.



Scenic Bornholm Island in the Baltic Sea has launched an ambitious recycling campaign. Will it work? Photograph by Gerald Haenel, laif/Redux

Imagine a whole community reusing or recycling every last scrap of waste. That may sound utopian, but perhaps not on the Danish island of Bornholm.

By 2032 all waste on Bornholm will be treated as resources, say officials. Garbage sorting, recycling, minimizing waste, and a lot of new technology are the tools envisioned to turn Bornholm into one of the first garbage-free communities on the planet.

Bornholm, the easternmost island of Denmark, is a 227 square-mile (588 square-kilometer) granite rock jutting out of the Baltic Sea. Known for its quaint fishing villages and sunny

climate, it is a popular vacation destination with a permanent population of 40,000 and another 600,000 annual visitors.

“By 2032 we aim to reuse or recycle everything,” says Jens Hjul-Nielsen, CEO of BOFA, the island’s waste management company and key architect behind the garbage-free vision. “How we get to that point is an exciting process, because there is so much we don’t yet know. We have a vision, but no clear-cut plan on how to get there.”

As the island’s only waste-incineration facility is wearing out, the bold decision was made last December to close it down in 2032 and make the transition towards a garbage-free society.

“Operating a waste management company on such a small scale as we do here has its challenges, so instead of investing in a new incineration facility, we decided to simply eliminate landfill and incineration as waste management options. We wanted to try something different and utilize that we are a society in miniature, complete with businesses, private households and tourism, where we can experiment and gain knowledge that later may be scaled up to a national or even a global level,” explains Hjul-Nielsen.

The vision

In BOFA’s vision of the future, the citizens of Bornholm will sort all their waste into different fractions, easy to collect and use in new resource loops. Metal, plastics, glass, paper, and cardboard are widely recycled, and new waste fractions such as fishing nets and insulation materials will be added to the sorting and recycling system. Meanwhile, organic waste will be converted into energy together with green garden and park waste, while the nutrient-rich residue from the energy extraction is used as fertilizer in fields, parks and gardens, writes BOFA.

In this circular economy, the inhabitants will reuse everything from furniture to children’s clothing and make use of sharing economy services—for instance lending, renting, or bartering goods through the internet or peer communities.

In elementary school children will be educated as “resource heroes” with practical lessons in waste, resources, the environment, and nature. And a university research center on models of green transition and the circular economy will be established on Bornholm.

The “Green Island”

It was a unanimous municipal council that decided to close the incineration facility and embrace this bold vision back in December.

But a green mind-set is not new to the local government. The municipality already adopted a “Bright Green Island” strategy to position itself as a leader in sustainable development, aiming to be CO₂-neutral by 2025, convert to green energy sources, and expand the island’s organic farm land.

“Yet, in the waste area we were lagging behind, so it was important for us to move ahead in this sector as well,” says Anne Thomas, the deputy mayor of Bornholm.

“As a first-mover in this kind of area, you can benefit from development funding from national and international sources like the EU,” she adds. “As a last-mover you benefit from all the trial-and-error that has gone before, and the technology is far cheaper to implement. Being in the middle field is the really heavy place to be. For us, the decision to be first-movers here was not a difficult one.”

The transition

Today, Bornholm recycles 39 percent of its household waste. The first step to becoming garbage-free is to increase this number, so that far more waste is sorted, recycled, and reused. That is in itself a huge task, “yet we know how to do all of this,” says Thomas.

“The really exciting stuff comes in the second phase where we shall be exploring new ways of working with companies, changing production processes, engaging the population, and testing new methods for waste management.”

Looking ahead to the final phase of transition, things become more uncertain, notes Hjul-Nielsen. “After all, we don’t even know what kind of waste there will be in the future—some types of material that need special handling now may be banned by then, or new materials may have been invented. The door can swing both ways, making our work easier or harder,” he says.

New technology will play an important part in meeting those challenges. BOFA is counting on attracting companies interested in testing new technology in a small arena like Bornholm before rolling it out on a larger scale—for instance new methods of breaking down and treating materials that are not available today. “And just four months in, we are already seeing an interest from some really major companies,” says the CEO.

The people

Even so, new technology alone will not drive the change.

The involvement and good will of the population will be a critical factor, emphasizes Jens Hjul-Nielsen. “As the interest in sustainability is gaining ground we are already on the winning team, as long as it doesn’t become expensive or difficult for people to deal with in their everyday lives. If it does, we might lose them.”

As it is now, the citizens of Bornholm pay a waste disposal tax to the municipality of approximately 3000 Danish kroner (\$454 USD) a year per household for all waste management, including a weekly collection and treatment service (if you have less waste, you may opt for a fortnightly service).

To finance the first step of extending the sorted waste to seven fractions—food, glass, metal, paper, cardboard, plastic, and wood—the local government has approved a waste disposal tax increase of 15 percent, adding \$68 USD to each household’s annual tax from 2022. This step

is in compliance with a nationwide policy that 50 percent of all household waste must be sorted into the seven fractions for recycling by 2022.

“The next step of becoming fully garbage-free is to be funded by internal reprioritization as well as external sources and collaborators. If this doesn’t suffice, we are budgeting with a maximal additional tax increase of one to two percent annually, or about \$4.5 to \$11 USD per household,” says Hjul-Nielsen.

BOFA is involved in an array of projects to engage the general public and the private sector in the transition. For example, one project is looking at different types of households—a fishing village with many tourists, a complex of townhouses, a small farming village—to understand the challenges of sorting and minimizing waste in different living situations and find the best solutions and ways of motivating people.

Other projects aim to encourage the production of goods with replaceable parts and reduce packaging, produce information material and explore—in dialogue with the tourist industry—the best ways to help visitors understand and use the sorting system.

Leading the way

“I meet a keen interest in correct waste management out there. A lot of villages and communities on Bornholm are already working towards a greener future and sharing their ideas with each other,” says the deputy mayor. “Transitioning to a circular economy is not just a question of buying more garbage cans, it’s about new methods and new behavior, a whole new way of thinking.”

But what if the island hasn’t realized its goal of being entirely garbage-free by 2032 - is there a plan B?

We are committed to the long-term goal, even if it takes slightly longer to get there than planned, says Jens Hjul-Nielsen. “If we still have a small amount of residual waste left by 2032, well, then we will send that for incineration at a facility off island and that will be the project to solve for 2033—but we will still have taken a huge step forward compared to where we are today.”