Life Cycle Assessment of Always True Co.

A Florida Clothing Studio

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Introduction

Always True is a clothing company based in Gainesville, Florida.

The brand upcycles used clothing bought from vintage shops across Gainesville and donated by others, then redesigns them for their own distribution. The carbon emissions for a single item is approximately **3.83 kg CO_2**, accounting for car emissions incurred while hunting for items, washer and dryer use, studio lighting, product shipping, and visiting customers' car emissions.

The report looked at but **excluded** emissions from the original production of textile and clothing assembly, usage of vinyl prints utilized in the **upscaling** process, and the shipping of paint materials used for redesign.

The carbon footprint was calculated in three categories; the **Hunt of clothes** including donations received at the shop, the **Restyle,** where items are fashioned, and the **Retail,** where items and customers come together. The retail itself takes place in three avenues; through direct customer visits to their Garage shop, through pop-up shops at local concerts and cultural shows, and sales realized through online platforms.

The Garage is where the brand does the redesign and customizes previously used fabrics and clothing items to into their own, unique branding. This Life Cycle Assessment (LCA) conducted research and processed available data to express the **Greenhouse Gas Emissions (GHGs)** for a six-month period between August 2019 through January 2020.

Always True Description

Always True started up in 2015 and has grown into a local clothing brand for a millennial alternative market. The brand has two product types; a new line, where cotton-blend items (T-shirts and sweaters) are ordered from a California based company[1], and printed with custom designed logos carried out by a local company, the Tee Shop.

The second line is the "**upcycle**" line, where the crew redesigns old fabrics and items donated or bought in local thrift stores. For this LCA, the upcycled line was exclusively calculated and studied, without mingling the emissions from the new clothing line.

All the items in the upcycled line are individually custom made. Within the upcycled line, the brand sells t-shirts, sweaters, jackets, jeans, shoes, and occasionally takes on special orders and items. These items are sold directly to customers who visit the Garage, at local events and on the vintage platform Depop[2]. Through the six-month period investigated, the brand upcycled around 450 items, and sold 75 of them.

Always True History

The brand started up in 2015, three years after the death of their brother and friend, Brandon. Brandon, whose stage name was Always True, became the inspiration for the brand, and Drew, Kevin and Sam have since been on a mission to pass on his legacy and beliefs through these unique clothing pieces.

[1] https://mill42usa.com

[2] https://www.depop.com/alwaystrueco/

Drew and Kevin manage the brand from the Garage, which is right across from the track and field stadium in a college town in Florida. Sam lives elsewhere and helps out occasionally. The trio started the upcycled clothing line in the spring of 2016, a year after selling primarily new merchandise, such as t-shirts, hats, and sweaters.

The inspirational moment came when Drew was cleaning out Kevin's closet and wanted to create a purpose and meaning out of his old clothes, rather than to throw them away and ending up in a landfill.

Kevin and Drew first started out dyeing the old clothes, and then spray-painting Brandon's stage name on them, thus creating their clothing brand in their garage. Like this, the trio transformed the **Garage** into an outlet for their creative, unique local fashion brand, Always True Co.

The Garage carries on average around 450 upcycled items, which are displayed on racks, and are combined with a workspace look, including some sewing machines, a vinyl cutter, a heat press, a washer and drier, and other items used for remaking fashion.

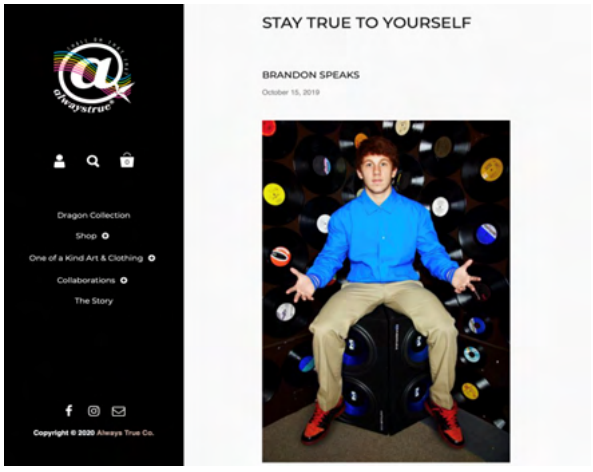


Figure 1; An image of Brandon, the muse and inspiration for the clothing brand Always True, developed by his two brothers after he passed away in 2012

Link to the story, Brandon Speaks[3].

[3] https://alwaystrue.co

Product Hunt

Drew and Kevin get in their car each week to hunt for items to ***upcycle***. The duo hunts for vintage pieces in four local thrift stores during their regular route; Future Perfekt, Flashbacks, Goodwill 13th street and Goodwill 34th street.

The route starts at the Garage and sequentially goes to the four shops before returning in their 2011 Suburban. Between 5 and 20 items are sorted every trip and subsequently repurposed for their merchandise brand.

The route of 20.2 km accounts for 8.5 kg of CO2 emissions in transportation. In 6 months, or 26 trips, a total of 221 kg CO2 is emitted by traveling for the “Product Hunt".

Donations were estimated at 5 items per event, with the donor traveling 10 km to and from the Garage, occupying the same vehicle type utilized in other areas of the LCA. Around 35% of the items are dropped off, and 65% is hunted.

Including donations, a total of 450 items were introduced to the team during the period, which amounts to an average of 0.78 kg CO2 emissions per item.

Figure 2 illustrates the "Hunt" route the brand uses to collect materials and vintage pieces.

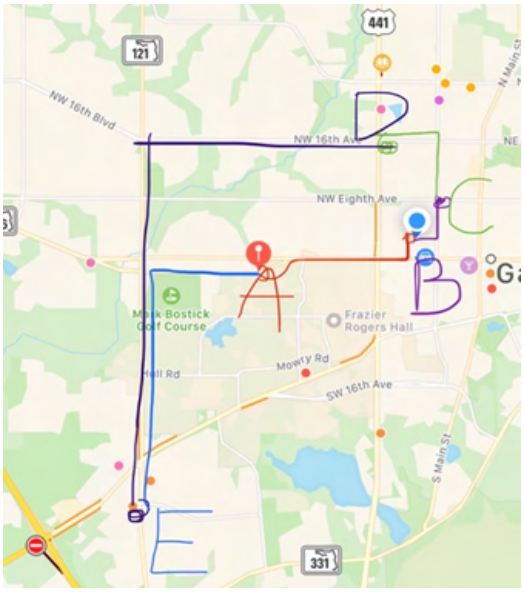


Figure 2; Point A – Always True Garage, Point B - Future Perfekt Store, Point C - Flashbacks Store, Point D - Goodwill 13th St., Point E - Goodwill 34th st.

The Restyle

The guys bring the clothes from their hunt into the Garage, which is located right off campus and underneath the house in which they live. In the garage, there is a washing machine, a dryer, a computer used for designs, vinyl/fabric printer, a heat press, a stereo, clothing racks stacked full of clothes and more. All the second handed clothes are washed and **air dried**. Clothes are dried in a dryer only when the space is limited or if they are on a time crunch, which is approximately 30% of the time.

The clothes are repurposed; spray-painted, tie-dyed, stamped with vinyl logos and tailored. They regularly work between 2 and 4 hours daily every day. After the clothes are upcycled, they are published on the company's Instagram account[4] and their website Always

[4] https://www.instagram.com/alwaystrueco/?hl=en

True, as well as their page on the vintage merchandise platform Depop. The clothes are exhibited in the garage until sold online, during pop-ups and local shows, or at the garage itself.

	*Figure 3; Acrylic Paint used for restyling*
	*Figure 4; The original print – a cardboard-cutout*

Figure 5; Pictures from the Garage and upcycled items

The washing machine is in use three times a week with around 12 hunted items in each cycle. Then they usually air dry the clothes, using a dryer only once a week.

The overall consumption of the washer and dryer causes 124.6 kg CO2. According to data maintained by the US EPA[5], the Gainesville conversion of 1 kWh is 0.61 kgs CO2 / kWh. Per upcycled item, the emissions are 0.13 kg CO2 from the washing machine and dryer combined.

The next step of the restyle is the artistic expression, using spray paints collected from the Alachua County Waste Management Facility (Leveda Brown Environmental Park & Transfer Station). The duo drives the 26 km roundtrip from the Garage, to get used paint three times a year. Per clothing item this calculates to 0.04 kg of CO2 in car emissions for the transportation there and back, considering the 450 items painted and upcycled in the 6-month span.

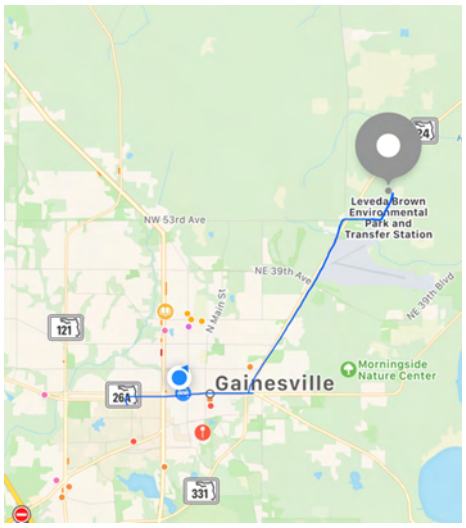


Figure 6; Map, Route from Garage to Leveda Brown Environmental Park & Transfer Station to collect spray-paint, a total of 26 kilometers

[5] https://www.epa.gov/energy/emissions-generation-resource-integrated-database-egrid

Figure 6; A photo of the inside of the facility

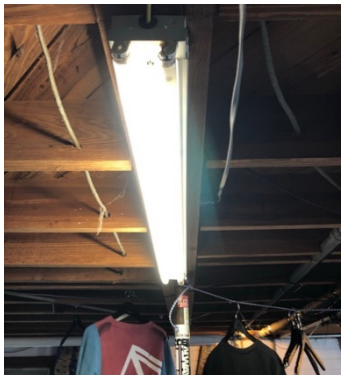
Facebook page of Leveda Brown Environmental Park[6]

Typically, the clothes are stamped with vinyl, heat pressed, and then spray painted. The use of a vinyl cutter and heat press amounts to 0.14 kg CO2 per item, however the emissions associated with the vinyl material itself are not counted for in the LCA. The guys use the press and cutter for 30 minutes at a time to restyle between 1-10 items.

Other emissions during the Restyle period are lighting, and overall consumption of utilities; natural gas, electricity, and water usage. The lighting used during the work hours accounts for 0.06 kg CO2 per item, but water use, natural gas use for heating were not included in the LCA. The household utility consumption had an impact of 1315.66 kg CO2 monthly, in the calendar year 2018. And though deemed to be small, due to uncertainties of the amount used for the Garage and Always True, the basement was not proportioned in the assessment.

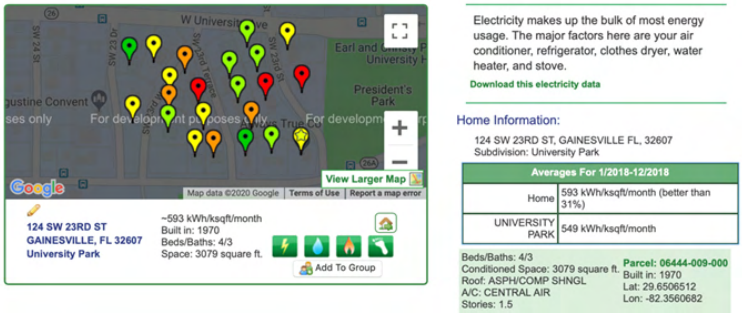
Rather, individual known consumptive objects were itemized and added up.

[6] https://www.facebook.com/pages/Leveda-Brown-Environmental-Park/310222099031584

	*Figure 7; Lighting used in the garage*
	*Figure 8; Lighting used in the garage*

Below a series of links, providing a sense of style, location, audience, production, and rythm of Always True.

https://youtu.be/Bwl1bmme78M https://youtu.be/lK2IQ32APzk https://youtu.be/0V1ll16mBBY	https://youtu.be/Nb984hQIUF4 https://youtu.be/sLHaDQEWxDI

	*Figure 9; [Gainesville Green](https://gainesville-green.com/home-report?home-id=129462)[7] show the annual consumption of the house the Garage is in*
	*Figure 10; Average kWh of the Garage location, relative to homes in the same neighborhood - the Garage has the icon with the **star***

The Retail

Always True has three different types of distribution for the “upcycled” line; stands at local events (pop-ups), items sold online, and pick-ups from the Garage.

The growing brand has 450 upcycled items and 350 new items with prints and logos, as of January 2020. During the six-month period covered in the report, the brand sold a total of 75 “upcycled” items. Of the 75 items, 39 were sold through pick-up at the Garage, 23 were sold online and then shipped, and 13 were sold at local events.

[7] https://gainesville-green.com/home-report?home-id=129462

Figure 11 shows the breakdown of kilograms of CO2 incurred during the distribution of the upcycled clothing line. 81% of the carbon emissions came from visits to the Garage, 13% emissions from the website and shipping, while 6% was released by staging pop-ups at local events.

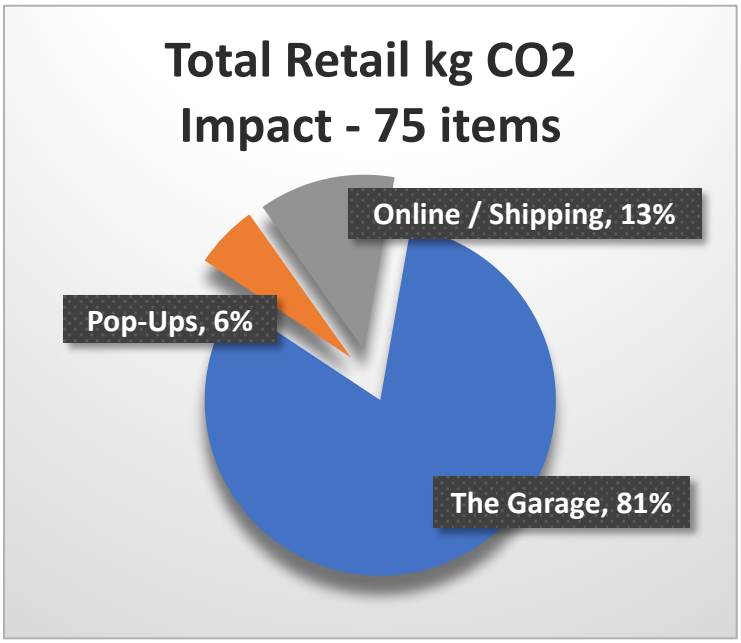


Figure 11; 258 kg total CO2 emissions; 163.8 kg CO2 from pick-ups at the Garage, 25.3 kg CO2 from online shipping, and 11.8 kg CO2 via pop-ups

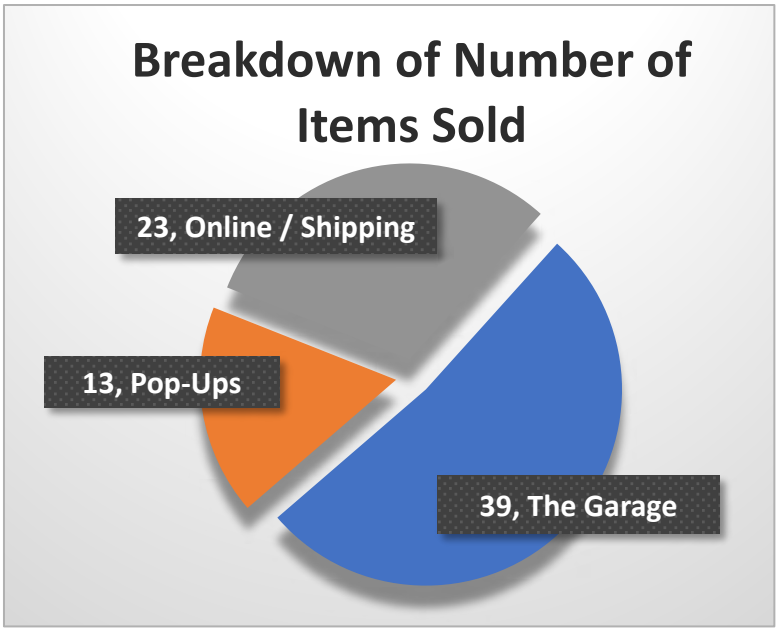
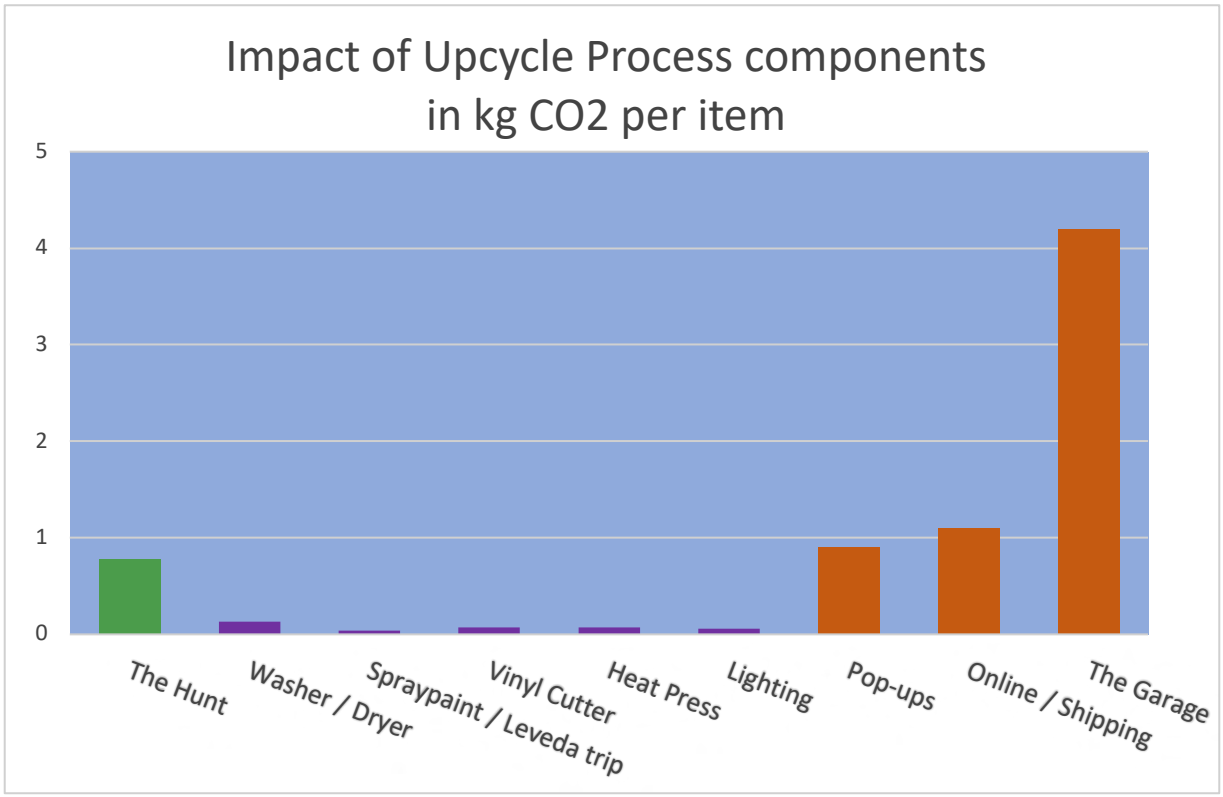


Figure 12; 75 "upcycled" Items sold over the six-month period; 13 items at pop-ups, 23 items online and 39 items from pick-ups at the Garage

Figure 13; Figure 14; A side by side view of the individual upcycle activities



Rank of *upcycle* components in an order of kg CO2 impact per item

Spray paint / Leveda trips - 0.04	The Hunt - 0.78
Lighting - 0.06	Pop-ups - 0.90
Vinyl Cutter - 0.07	Online / Shipping - 1.1
Heat Press - 0.07	The Garage - 4.2
Washer / Dryer - 0.13	

Comparisons with other everyday items

In Figure 15, a graph shows the carbon emissions of one white cotton long-sleeve shirt for its entire life cycle. The study, conducted in 2009, measured the existence of the shirt to incur as much as **10.75 kg CO2**, in which **6.92 kg of CO2** comes from the production of the shirt.

Therefore, by reusing cotton shirts, the *Always True* brand saves the Atmosphere 67% of a shirt's emissions, based on research done by Systain.

10.75 kg CO2 "new shirt" – 3.83 kg CO2 "upcycled" item = 6.92 kg CO2 avoided.

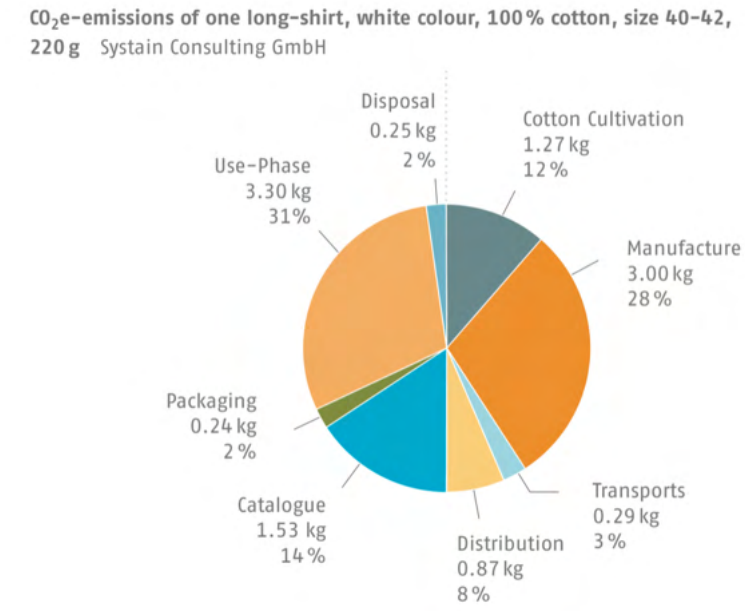


Figure 15; from a study in 2009, illustrates GHG emissions from a long-sleeve cotton shirt, 10.75 kg CO2e emissions

Conducted by Systain Study[8]

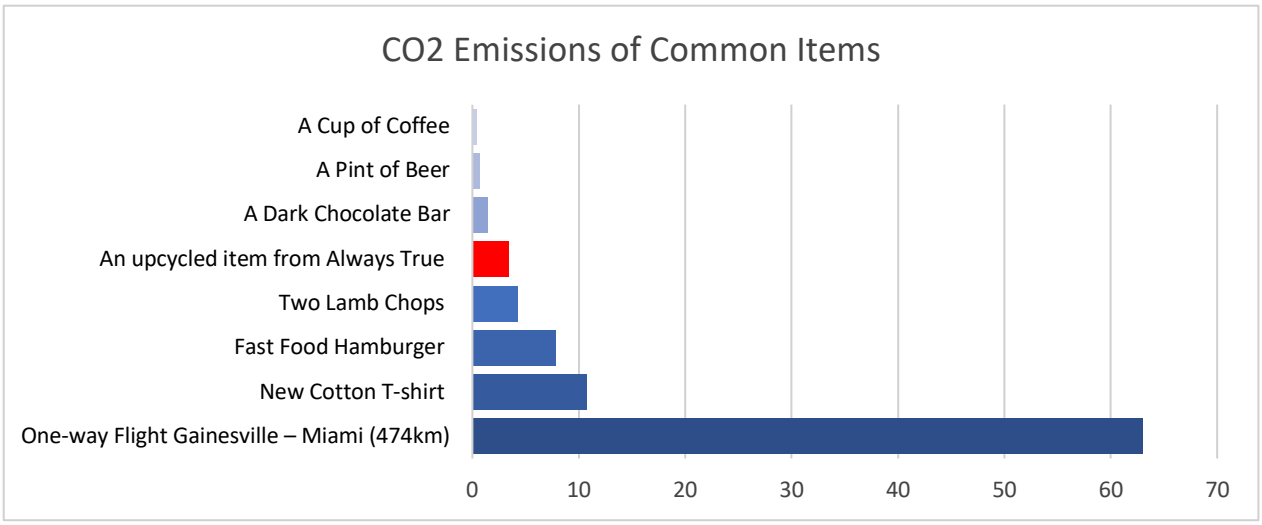
In contrast, the use of a cell phone one hour a day averages **1250kg CO2e** annually. This is not so much the phone itself, rather the data centers and large network servers, where a smart

[8] https://www.systain.com/?download=6462

phone accesses apps, texts and more. The ubiquitous phone, in a way, is a portal that incurs emissions elsewhere. Daily phone use causes approximately 3.42 kg in CO2 emissions, which is comparable to an average item upcycled by Always True. (Berners-Lee, 2010) (Sparks, 2019)

Figure 16; Photograph; Samuel Gibbs, The Guardian

Figure 17; *An upcycled item from Always True emits more than a serving of a Dark Chocolate bar, and less than two Lamb Chops[9,10], according to a 2019 Oxford University study.*

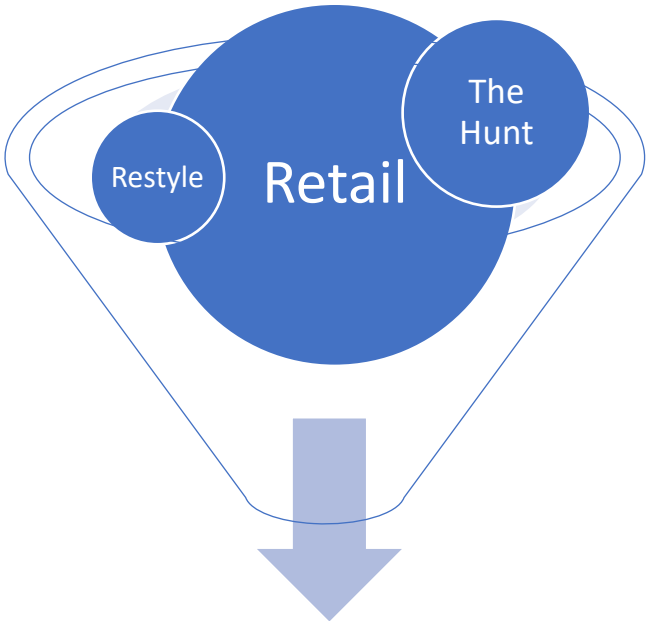


[9] https://www.bbc.com/news/science-environment-46459714

[10] https://ora.ox.ac.uk/objects/uuid:b0b53649-5e93-4415-bf07-6b0b1227172f

Figure 18; A visualization of the activities included in the Always True LCA

The activities are shown as the relative, average impact per item, The Hunt – 0.78 kg CO2, Restyle – 0.37 kg CO2, and Retail – 2.68 kg CO2.



This LCA concludes = upcycled fashion items incur 3.8 kg CO_2

Conclusions

Overall, the assessment provides clear evidence that recycled clothes have much lower emissions compared to similar new items.

By reusing second handed items, Always True eliminates fabrication, a big portion of the carbon emissions. With 3.83 kg in average greenhouse gas emissions, Always True fashions have only 1/3 of climate impact as other clothing brands, where the average for a T-shirt is close to 11 kg CO_2.

Notably, this Life Cycle Assessment validates the sustainability of fashion reuse through the quantification of the climate emissions of the clothing brand, Always True.

Works Cited

Always True Co. (2020). *AlwaysTrue* . Retrieved from https://alwaystrue.co/blogs/brandon-speaks/brandon-speaks

Berners-Lee, M. (2010). What's the carbon footprint of ... using a mobile phone? *The Guardian* , 1.

Hurst, N. (2017, April 12). *What's the Environmental Footprint of a T-Shirt?* Retrieved from Smithsonian Magazine: https://www.smithsonianmag.com/innovation/whats-environmental-footprint-t-shirt-180962885/

Mike Berners-Lee, D. C. (2010, November 25). *What's the carbon footprint of ... a load of laundry?* Retrieved from The Guardian: https://www.theguardian.com/environment/green-living-blog/2010/nov/25/carbon-footprint-load-laundry

Nassos Stylianou, C. G. (2019, August 9). *Climate change food calculator: What's your diet's carbon footprint?* Retrieved from BBC: https://www.bbc.com/news/science-environment-46459714

Sandra Roos, G. S. (2015). *Environmental assessment of Swedish fashion consumption.* Sweden: Mistra Future Fashion Consortium.

Sparks, H. (2019). A year of cell phone use emits as much C02 as two round-trip flights. *New York Post*, 1.

Systain Consulting GmbH. (2009). *The Carbon Footprint of clothing.* Hamburg : Systain Consulting GmbH .

United Parcel Service. (2013). *UPS Corporate Sustainability Report 2013.* California: UPS.

Zoro Tools. (2020, April 3). *LITHONIA LIGHTING Channel Strip Fixture, F32T8,120V*. Retrieved from Zoro: https://www.zoro.com/lithonia-lighting-channel-strip-fixture-f32t8-120v-c232-mv/i/G0768381/