Renewable

Renewable materials can be generated from nature within a short period of time on a human scale without diminishing the overall quantity of the world's supply. Non-renewable materials, like fossil fuels, require thousands of years to generate and are in limited supply.

THE FOLLY OF BUILDING A FUTURE ON NON-RENEWABLE RESOURCES

Ever since oil was first discovered and humans learned how to turn it into energy and consumer products, we've been in love with it. Yet little did we know when we first started to tap into this resource that there was a limited supply, and that using it up would create such huge environmental problems for our species. Every other non-renewable resource we've used so expediently since then – from natural gas to water – carries with it untold ecological and humanitarian problems.

DEFINING NON-RENEWABLE RESOURCES

A non-renewable resource is a raw material that is derived from the earth, but that has taken very long periods of time to form. Usually found deep below the earth's surface, non-renewable resources are difficult to extract and limited in quantity. Since it has taken these resources so long to form, we do not have unlimited quantities of them. We cannot simply generate more – or *renew* the supply – of a nonrenewable resource.

This is why they are considered non-renewable – the total supply on the planet is being depleted at a rate that is faster than the human time frame. In other words, within human time scales, non-renewables will be completely spent. They are therefore not infinitely renewable.

NON-RENEWABLE FOSSIL FUEL RESOURCES

The most common type of non-renewable resources is fossil fuels. Fossil fuel was formed over hundreds of millions of years by the decomposition of plants. After a long period of time, layers and layers of rock, mud, and sand covered the dead plants thousands of feet under the earth, which fossilized them. When extracted from the earth, these fossil fuels can be used to generate the following resources:

- Natural gas
- Oil
- Coal
- Uranium

Fossil fuels are turned into a myriad of other products after they have been extracted from the planet. For instance, crude oil can be turned into gasoline, diesel fuel, jet fuel, home heating oil,

propane, and electricity. It is also used to make plastic products, fertilizers, waxes, inks, and automobile products.

Because non-renewable resources are difficult to extract, they impose a heavy environmental toll on the planet. Here are just some of the environmental disasters that result from conventional oil drilling.

- **Damage from fossil fuel exploration:** When a region is identified as having fossil fuels, it must be analyzed. This involves driving huge vehicles equipped with sound-wave emitting instruments. They drive in a grid pattern with lines spaced 1.5 to 4 miles apart. They trample natural habitats during this process.

- **Fossil fuel industry infrastructure:** When the fossil fuel industry moves into untouched wilderness, it creates a huge mess by installing drilling sites, roadways, pipelines, and buildings to support their work and the humans laboring in the field.

- **Wildlife migration patterns:** Wildlife will tend to steer clear of drilling sites out of fear. In the Arctic National Wildlife Refuge (ANWR) in Alaska, scientists estimate that the female caribou in the region will veer of their normal migration route by as much as 2 miles to stay away from drilling infrastructure like pipelines and roads. This could adversely impact the survival of their calves and as a result, diminish the caribou population levels. Similar and serious impacts are seen in populations of musk oxen, polar bears, and migratory birds.

- **Oil , gas and deforestation:** Our forests are incredibly important to human survival. We need them to clean the air, the water, and to mitigate climate change. Plus they provide habitat for 90% of all land-dwelling animal and plant species on the planet. Extracting fossil fuels contributes to the destruction of forests through deforestation and oil spills due to burst pipelines, malfunctioning pumps, and direct dumping.

- **Water consumption for fossil fuel extraction:** Worldwide, 22% of all water consumed by humans is used for industrial purposes, including mining and fossil fuel extraction industries. Water is used to process fossil fuels and turn them into other fuels and products. And when the water has been spent, wastewater from these industries is dumped into the environment. It contains toxins such as benzene, toluene, hexavalent chromium, heavy metals, selenium, hydrogen sulfide, boron, and hydrocarbon residues, all of which are toxic to humans and the environment.[i]

The horrors of fossil fuels don't end there. Fossil fuels are also damaging to human health and wildlife:

- **Oil spills and wildlife:** When oil is spilled in the wild, it has far-reaching consequences for wildlife as it coats their bodies and poisons their ecosystems. Oil will cause hypothermia in birds and seal pups, destroying their ability to insulate themselves and the waterproofing of their feathers or fur. As oil weighs them down, they can drown or become easy prey because they cannot get away. When ingested by wildlife, oil will poison animals, damage their red blood cells and immunity, damage their internal organs, and destroy their airways and

lungs. Oil will also interfere with breeding of many animals and can cause blindness, ulcers, and conjunctivitis in turtles and other marine life.[ii]

- **Pollution from oil spills:** On average, 6,100 barrels of oil (42 gallons each) and other toxic chemicals related to the industry spill into the environment every year. Though the fossil fuel industry may argue that they are becoming better at what they do, the number of spills has actually increased – there were 2,900 barrels spilled on average in the 1980s and 4,400 barrels In the 1990s. That means we've almost doubled the quantity of oil spilled every year.[iii] The US Department of energy estimates that 1.3 million gallons of crude oil are spilled into US waters annually.[iv]

- **Raw crude oil:** Crude oil it its raw form is highly toxic, and can contain substances such as mercury, iron, chromium, benzene, toluene, and xylene. When exposed by skin, eye, or respiratory contact, humans experience dizziness, headaches, anemia, rapid heart rate, skin reddening, and edema.[v]

- **Air pollution from burning crude oil:** When crude oil is burned, it releases compounds that are highly toxic to human health, including lead, nitrogen oxides, particulate matter, sulfur dioxide, and volatile organic compounds (VOCs). These pollutants are toxic when breathed in by humans, but they also contribute to smog, which can cause aggravate asthma and other respiratory diseases. [vi]

These are just some of the issues related to traditional methods of getting access to fossil fuels below the earth's surface.

As easy-to-access resources are depleted; only hard-to-reach resources remain. This requires companies to use more extreme and more expensive means for extracting these resources. Not only do non-renewable resources put a heavy financial burden on society, the extreme measures used to extract these resources become more and more environmentally damaging over time. Companies also venture into increasingly more sensitive ecological regions to get to previously untapped resources. This means many areas, such as the ANWR and our oceans are in peril due to the risk of oil spills, chemical contamination, and ecological destruction.

NATURAL GAS FRACTURING

Easy to access natural gas used to flow freely, but that is no longer the case. As a result, the natural gas industry has started to explore more hard to reach sources of natural gas. The process of natural gas fracturing also known as fracking, formed because natural gas used to flow freely, but no longer does. Fracking is a process used to access natural gas contained in shale rock and sand (which is why it is sometimes called shale gas).

In order to release this natural gas from the rock and sand, engineers fracture the rock. After digging a vertical well up to 10,000 feet deep, they use high pressure injections of water mixed with chemicals to crack open the rock. The fissures created in the rock through this process then release their natural gas which is pumped to the surface.

Proponents of natural gas tout it as a cleaner burning fuel than coal or oil, and it's true. However, the process for extracting natural gas through fracturing comes with extremely serious environmental consequences, making it fossil fuel with at least an equally negative reputation compared to coal and oil:

- **Highly toxic wastewater**: The water that comes out of a fracked well (often called frac fluid) contains dangerous toxins for humans and wildlife. In fact, it can contain hundreds of different chemicals including things like benzene and formaldehyde.[vii] Yet the wastewater is simply stored in open ponds where animals and birds can land and drink, often leading to illness and death.

- **Poisoned drinking water**: The chemicals and methane gas from a fracked well can seep into ground water sources. Some residents living near fracked wells have been able to light their tap water on fire because of the high levels of methane in their drinking water. These chemicals have serious health consequences for the residents.[viii]

- **Extreme water waste**: It can take up to 8 million gallons of water to frack a single natural gas well.[ix] Yet more than one-third of all counties in the US – 1,100 or more – are facing water shortages by mid-century.[x]

- **Increased earthquakes**: The act of fracturing open rock to get at natural gas has now been linked to increased frequency of earthquakes in regions adjacent to these wells. A two-year study of injection wells located in Barnett Shale, Texas showed that there were eight times more earthquakes in the region than was reported by the National Earthquake Information Center.[xi]

- **Fracked gas and climate change**: The natural gas industry has tried to claim that natural gas is better for climate change, and should be used as a stepping stone energy source until renewables take over. However, natural gas from fracked wells is far more dangerous than conventional natural gas sources in terms of global warming. That's because compared to conventional natural gas wells, fracked wells leak 40% to 60% more methane – a greenhouse gas emission that's 23 times more powerful at trapping heat in our atmosphere than carbon dioxide. A recent study showed that 17% of all future US greenhouse gas emissions will result from these natural gas operations.[xii]

Fracked natural gas is far from being the savior fossil fuel Americans are hoping for. It's worse for climate change, worse for wildlife, and worse for humans. This unconventional fuel is better off left in the ground until the industry can find safer ways to extract it.

TAR SANDS EXTRACTION

The extraction of tar sands oil in Alberta, Canada, has been called the most destructive project on earth. It's also been dubbed the world's only giant slow motion oil spill.

So, what is tar sands oil? Often referred to as oil sands, this oil is actually a sticky combination of clay, sand, water, and bitumen all mixed together in the environment. This oily sludge was

deposited just below the surface under a relatively thin layer of vegetation. It can be found in vast quantities in Alberta, Canada, and in regions north of that province.

Unlike an oil well which involves a relatively small focused well drilled into the surface of the planet to bring oil up from underneath, tar sands only extraction is much more destructive. The only way to extract this oil is through strip mining. This ugly process involves stripping away all natural vegetation for miles on end. Huge machines then come in and scrape away the layers of sticky, oily sand and carry it off to a production facility. There, vast quantities of water combined with toxic chemicals are used to separate the bitumen from the clay and sand.

So in addition to all of the environmental destruction associated with conventional oil extraction – cutting roads into wilderness, erecting roads and buildings that crisscross into the landscape, and so on – tar sands produces spent water (similar in some ways to frac fluid) that is deposited into huge toxic ponds.

- **Massive ecosystem disruption:** The strip mining process involved in tar sands extraction requires the removal of huge quantities of vegetation and soil. In fact, one estimate is that for every barrel of oil sands extracted, the industry displaces four tons of earth.[xiii]

- **Vast quantities of water waste:** Every single day in Athabasca, Alberta where tar sands are being extracted, the industry mixes 200,000 tons of heated water with bitumen. This is fresh water that would otherwise feed ecosystems and local residents but instead it's flushed with chemicals and then dumped into pits.[xiv]

- **Tar sands and climate change:** For the nation of Canada, the development of tar sands oil is the fastest growing source of global warming pollution, and is the primary reason the country pulled out of the Kyoto Protocol. The more they scrape the earth to extract tar sands oil, the farther away Canada moves from becoming carbon neutral.[xv] In fact, it is estimated that the 830,000 barrels of bitumen oil carried away from Alberta every day will be equivalent to adding 26 million more cars to the road – 8 billion tons of greenhouse gas emissions over the next 50 years.[xvi] One estimate is that tar sands oil results in up to 40% more greenhouse gas emissions than conventional oil.[xvii]

- **Cancer clusters:** The toxic chemicals used in extracting oil sands are seeping into the water supplies of the First Nations people living in close proximity to the operations. And scientists now are saying that cancer clusters are showing up. In one community, Fort Chipewyan on Lake Athabasca, there have been too many cases of cholangiocarcinoma – a rare cancer of the bile duct. This cancer should show up only once in a population of 100,000, but in this community of 1,000, there have been five cases.[xviii]

- **Wildlife illness:** Both fish and mammals have been found with tumors and mutations on their bodies as a result of all of the chemicals being pumped into the environment.[xix]

- **Acid rain:** Because of the increased levels of sulfur dioxides and nitrogen oxides coming from tar sands operations, rain acidity in communities downwind of the oil sands

operations are more acid than they were 15 years ago. This will impact forests and other ecosystems hundreds of miles away.[xx]

- **Tar sands gateways:** To get the tar sands oil to international markets, the extraction industry has proposed to either build a pipeline west from Alberta out to the coast of British Columbia known as the Northern Gateway, or to build a massive pipeline south of Alberta to deliver the oil out through Texas, known as the Keystone XL. Either way, there are huge environmental risks due to the potential for oil spills on land or at sea. Typically only 10% to 15% of all oil spilled can be recovered,[xxi] and given that the company behind the pipelines has spilled 19 million liters through 800 pills of oil over the past 30 years, there is a huge risk many more spills will happen.[xxii]

The important point to remember with these unconventional fossil fuels is that, if we were not so dependent on non-renewables like oil and natural gas, we would not have to push environmental boundaries to extract fracked natural gas and tar sands oil.

THE PEAK OIL THEORY

Today, there are many leading scientists who are predicting that even these unconventional sources of fossil fuel will run out. In fact, the rate at which fossil fuels are extracted from the earth has been rapidly climbing since the early 20th century. Many scientists have theorized that at some point, the production rate will have to reach a peak point, after which production rates will start to fall. Peak oil will not only mean higher prices for goods created using fossil fuels, it will also mean serious economic consequences for countries that rely heavily on the oil and gas sector for their financial wellbeing.

The chief economist for the International Energy Agency has concluded that because crude oil prices have stayed flat for five years, we have already reached peak oil (2006).[xxiii] When oil runs out, we may face shortages of everything from consumer goods to food and fuel for heating our homes to electricity. The consequences of surpassing our stores of non-renewable sources of energy before we make the switch to renewable sources of energy are potentially serious and even deadly. Peak oil is just another reason why we need to stop depending on non-renewables for our modern lives.

WHERE YOU'LL FIND NON-RENEWABLE RESOURCES IN THE FAST FASHION INDUSTRY

It's going to take a huge shift to extricate ourselves from our fossil fuel dependent lifestyles. This is especially true when you consider how prevalent non-renewable resources are in consumer goods. You can see this when you consider how much the fashion industry depends on fossil fuels, both for energy and as a raw resource:

- Making plastics for things like jewelry consumes up to 5.1% of all combustible energy of US oil and gas production.[xxiv]

- For every kilogram (2.2 pounds) of textiles created, the textile industry consumes 0.6 kg (1.3 pounds) of oil and generates 2 kg (4.4 pounds) of greenhouse gas emissions.[xxv]

- Manufacturing one pound of textiles generates one pound of solid waste.[xxvi]

Perhaps the most obvious place you'll find fossil fuels in the fast fashion industry is in synthetic textiles which are made from byproducts of the oil and gas industries. Known as polymer textiles, these synthetic fabrics take many forms. Historically, most of these synthetics were developed to replace natural fibers due to resource shortages or financial concerns, but with the threat of peak oil, fabrics made from oil and natural gas byproducts are becoming more expensive and less sustainable.

- **Acrylic:** This synthetic petroleum-based fiber is made from polyacrylonitrile polymers, as well as vinyl acetate or methyl acrylate.

- **Celliant:** This is a brand name for a polyethylene terephthalate synthetic oil-based fiber which is used to make athletic apparel, bedding, and other clothing and apparel.

- **Polyester:** Sometimes referred to by the generic name of elasterell, polyester is created from petroleum derivatives, and refers to polyethylene terephthalate (PET). Though some naturally-derived polyesters can be produced, most are synthetic and non-biodegradable.

- **Lastol:** Dow Chemical markets this synthetic fiber which is used as elastic in many types of clothing.

- **Nylon:** This is a synthetic fiber made from oil polymers known as polyamides and can be found in many fashion pieces either as pure nylon or combined with other textiles and fibers.

- **Spandex:** Known for its elasticity, Spandex is also called elastane and is made from petroleum byproducts – polyurethane-polyurea copolymer developed by DuPont.

- **Thinsulate:** Another synthetic fiber, Thinsulate (made by 3M) is a mixture of petroleum polymers and is used as insulation in clothing and accessories.

You'll also find non-renewable resources in everything from plastic buttons to Velcro to shoe components to fake leather and feathers.

WATER: ANOTHER NON-RENEWABLE RESOURCE

Some types of water are also considered non-renewable resources, since the amount of fresh water available for consumption is declining faster than it can be replenished naturally. This is especially frightening given just how little fresh water we have for human use:[xxvii]

- **Limits of fresh water:** The earth is 70% water, but 97.5% of that water is salt water and only 2.5% is fresh. Of that 2.5% fresh water, only 0.007% is available for human use. The rest is locked up in icecaps or dissolved as soil moisture.

- **Water consumption per capita:** In North America, the average person consumes nearly 1,900 cubic meters of water every year – more than any other region. In Africa, they only use 245 m^3 of water annually.

- **Global water shortages:** The UN has said that water consumption exceeds 10% of renewable freshwater resources, leaving 80 countries and 40% of the world's population with water shortages.[xxviii]

With the human population growly rapidly and water consumption increasing among once-poor populations, water shortages will only get worse in the decades to come. That's why some are also predicting peak water – a point at which we will go beyond maximum water use and slowly realize we don't have as much as we once did for our daily use. Since water is used throughout the fashion value chain, it must also be considered when talking about non-renewable resources.

ETHICAL FASHION MADE FROM RENEWABLE RESOURCES

Where the earth puts up limitations, the eco fashion industry responds with ingenuity and innovation. Hearts' eco fashion movement is full of pieces made from creative and interesting renewable materials that are easier on the planet and those living in the communities that create ethical fashion.

Renewable materials are grown or cultivated in a relatively short time frame compared to non-renewable resources which are generated through natural processes that take thousands of years to complete. Since renewable materials can be produced in less time and harvested with much less effort than non-renewable resources, they create significantly less environmental degradation than non-renewables. They also are more financially and socially sustainable because there is little risk of the supply of renewable materials running out.

- **Comparing synthetics with natural fibers:** Natural fiber composites would save 20 MJ of non-renewable energy per kilogram of polymer created compared to petroleum-based fibers, and reduce the environmental impacts by at least 20%.[xxix]

- **Climate change and plant fibers:** Using fossil fuels releases carbon into the atmosphere but many plant-based textiles are better for the climate. For instance, Ingeo fibers derived from corn can be made with 20% to 50% less fossil fuel than other synthetic fibers.[xxx]

So in addition to being more carbon neutral than synthetic textiles, plant-based fibers are also less toxic for the environment. Today, there are numerous renewable resources that are being used to create sustainable clothing and accessories, all of which can be produced for centuries under the right earth-friendly circumstances. These renewable resources are more affordable than petroleum (long term) and put less strain on planetary systems, too. The following outlines will give you an idea of some of the renewable materials we use in our Hearts eco fashion line.

Renewable

RENEWABLE TEXTILES: PLANT-BASED CELLULOSE FIBERS

As fossil fuel resources are depleted and prices for petroleum-based materials increases, the sustainable fashion industry turns to innovative textiles and materials to replace traditional components. Many of these renewable textiles are derived from plants, including the following.

- **Acetate:** This is a human-made fiber which is created using cotton or tree pulp cellulose, though some versions are made with petro-based components (such as those used to make nylon and polyester).

- **Azlon:** This is a human-made textile derived from plant proteins, such as peanut, soy, milk, and corn.

- **Bamboo:** The fiber of bamboo stalks can be transformed into yarn, including some forms of rayon. Some unsustainable methods of turning bamboo into fiber are less than eco-friendly because they require the use of chemicals like lye, carbon disulfide, and acids. However, a natural process that requires mechanical crushing of the woody stalks and natural enzymes is very sustainable. Compared to non-renewable fossil fuels, bamboo is at the opposite end of the spectrum because it is a rapidly renewable resource. It can be harvested within three years of the plant first sprouting depending on the variety grown.[xxxi] Bamboo will produce twice as much fiber as pine trees using the same acreage, but in much less time.[xxxii] Some types of bamboo can grow as much as 150 feet in just six weeks.[xxxiii]

- **Capim dourado:** Known as golden grass in English, this is a straw that is used in jewelry and handicrafts, grown easily and sustainably by village people of Brazil.

- **Corn-based textiles:** Through a process known as bacterial fermentation, corn and corn byproducts (like husks and chaff) are converted from a starch to a sugar and then to a polylactic acid which is used to make thermoplastics into fibers. These include textiles such as Teijin Fibers' Biofront and Designtex's Ingeo fabrics. They can be created in a closed-loop manufacturing process and are biodegradable fabrics at the end of their useful life.

- **Hemp:** This natural fiber is derived from the woody part of the plant, called the bast. It is made using material from the plant known as cannabis sativa (which should not be confused with the strain that is used to create marijuana). Growing hemp requires few or no pesticides and little irrigation. Hemp is extremely renewable. Per acre, hemp plants produce between 2 and 12.5 tons per acre, which is considerably more than the average agricultural crop which yields between 2 and 3 tons per acre.[xxxiv] China is the world leader in hemp agriculture, followed by countries in Europe, Chile, and North Korea due largely to the fact that growing hemp is not illegal in these countries. Canada is also a big producer of this crop.[xxxv]

- **Linen:** Here's a natural fiber made from the fibers of the flax plant. These fibers are broken down by bacteria through a process called retting, which are then spun into yarn. Flax-based linen may be the oldest textile in the world, dating back as far as 70,000 years ago.[xxxvi]

Linen is extremely sustainable, can be grown organically, and requires little to no chemicals during the production phase.

- **Lyocell:** This cellulose fiber made from wood pulp is often sold under the brand name Tencel. It is considered a type of rayon. Though chemicals are used to create these fibers, 99.5% of them are recaptured and reused over and over again, making it a close-loop production method.[xxxvii]

- **Modal:** This is a trade name for a cellulosic fiber made from reconstituting the cellulose of wood (most often from beech trees).

- **Qmilch:** This is a textile created from the protein found in powdered milk (casein) which is spun into yarn and heated to bond the molecules. It takes 6 litres of milk to make enough fabric for one dress.[xxxviii]

- **Rayon:** Also known as art silk or viscose rayon. Rayon is considered a semi-synthetic because it uses wood fibers (pine, spruce, hemlock) or even cotton, which are chemically changed to create a new textile. Rayon is a more biodegradable fabric than cotton.

- **Soy:** Derived from the husks of soy beans (a waste product of the soy bean industry), textiles from soy are renewably produced. Sometimes called the vegetable cashmere, soy fabrics are very soft and have a wonderful hand.

RENEWABLE TEXTILES: VEGETABLE-BASED FIBERS

Vegetables and the byproducts of vegetable agriculture are also frequently used to create textiles and other materials for use in sustainable fashion attire.

- **Acai seeds:** Prized for their health benefits, acai berries are harvested and squeezed for their juice, leaving acai seeds as a waste product. These seeds are used to create sustainable fashion pieces.

- **Abacá fiber:** Made from the pulp of bananas, abaca fiber is used to make handbags and eco clothing. Abacá is usually cultivated in the Philippines, Ecuador, and Costa Rica.

- **Banana fabric:** Derived from banana leaves, this fiber is completely renewable and biodegradable.

- **Coconut shells:** Also referred to as coconut wood, the shells of coconuts can be carved to create rustic or refined eco jewelry as well as boxes and other home décor accessories.

- **Cork:** This is a material that is harvested from the bark of cork oak trees without harming the tree. Cork renews itself naturally over the period of 10 to 12 years after which it can be harvested again. This is therefore a highly renewable material.[xxxix]

- **Pandanus:** Harvested from the pandanus tree, the leaves of the tree can be made into ropes which are used to create bags, mats, and decorations.

- **Piña:** Derived from the leaves of pineapple plants, piña fibers can be combined with silk or other fibers to make textiles used for eco clothing and handbags.

- **Tagua nuts:** These nuts are harvested from tagua palm trees in Latin America and can be carved like ivory into beautiful eco jewelry and fashion pieces.

- **Tento seeds:** Grown in Brazil, tento trees produce bright red tento seeds which are popular in sustainable fashion accessories.

Other plants are used in a variety of ways throughout the world to create beautiful hand-crafted jewelry and accessories, including pieces such as grass beads and grass woven handbags.

ANIMAL-DERIVED RENEWABLE MATERIALS USED IN SUSTAINABLE FASHION

Many animals also produce byproducts that can be used to create eco fashion clothing and accessories. Consider, for instance, the following sustainable fashion materials:

- **Alpaca:** The fleece sheared from the alpaca animals raised in South America is a very renewable resource. Alpaca wool is much softer than sheep's wool, and can be sheared from the animal once annually, usually in the spring. The average alpaca will grow anywhere between 3 pounds and 10 pounds of fleece every year.[xl]

- **Porcupine quills:** If collected from porcupines that have shed their quills naturally, this renewable material can used to create a variety of accessories and sustainable fashion items. While there are some practices less favorable in the collection of porcupine quills such as porcupine harvesting and hunting, Hearts is deeply dedicated to only using quills that have been shed naturally and in a sustainable manner.

- **Silk:** Technically worms are not animals, but given that silk is derived from the work of living creatures, we include it in this section. Given that silk is produced from the protein fiber spun by silk moth larvae, silk is highly renewable. Hearts is extremely sensitive to the right of all creatures big and small. For that reason we will only use silk that is produced after the silk worm has lived the duration of its natural life. This allows for our silk products to be both renewable and kind in our practices.

GREEN LIVING TIPS FOR SUPPORTING RENEWABLES IN YOUR EVERYDAY LIFE

1. **Avoid synthetics:** Whether you're buying the latest fashions, or purchasing containers for food storage in your kitchen, try to opt for renewable materials rather than synthetics whenever possible. In other words, when you have the choice, look for renewable materials such as plant-based materials, glass, and recyclable material like steel and aluminum. This

way you can reduce your contribution to oil and gas destruction and begin to wean your lifestyle off of plastic and other fossil fuel materials.

2. **Look at alternate methods of transportation:** Make it a priority to use less fuel for your transportation. You can do this by walking, cycling, running, or roller blading to work or school. Then take public transportation as a second best option. You can also choose car sharing opportunities and if you own a vehicle, make it as fuel efficient as possible. Keep your tires at the correct psi and be sure to get regular tune-ups.

3. **Improve your home's energy efficiency:** You probably use a lot of energy to cool and heat your home, which can severely increase your dependence on fossil fuels. Reduce your use of home energy consumption by getting your home audited and then implementing energy saving features recommended. There are also extremely easy and ecofriendly ways to improve the energy efficiency in your home, for example a properly placed tree can shade your house and cut your electricity usage by up to 40% in the summer.

4. **Recycle as much as possible:** Many of the products in your life are created out of oil or natural gas, or the production processes were energized by fossil fuels. Recycling these materials helps to save energy and put useful raw resources back into the value chain, which reduces the amount of new fossil fuels we have to extract. Many cities have free recycling services that will pick up your recyclable goods right from your home.

5. **Tell your political representatives you want clean power:** The only way to get our entire country to reduce its dependence on foreign oil is to get our political representatives to pass legislations that will clean up industry and the energy sector. Talk to your local, state, and federal representatives and tell them how important it is that we reduce our consumption of fossil fuels.

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