

THE VALUE IN GREEN TRANSITION 2022

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OUR TEAM



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OUR TEAM



Shuhan Long is an undergraduate student studying biology at the University of Göttingen, with a focus on behavior and neurology. Sustainability is a constant topic for biology students, and this is her first time working with people from different fields outside of the lab. She hopes to explore more knowledge and experience in an interdisciplinary field and in an international team.

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Dongqi Guo is an undergraduate student of English and American Studies at the University of Pécs. He has been involved in many business competitions and his team made a product about a green future, so he is passionate about business and sustainable development. He also has experience working as an operations trainee and specializes in promotion and market research.

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OUR TEAM



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EXECUTIVE SUMMARY

The need for the green transition in the near future is more current than ever. One main aspect regarding the development of the green transition is the circular economy as a possible form of the future economy.

In the context of the project “**The Value in Green Transition**”, we have chosen circular economy as our main topic. To achieve a well-working green transition and implement a circular economy completely, it is unavoidable that every part of the world should be involved. The most distinguishable industries that require immediate and primary green actions will be the fashion industry and the use of green energy. Therefore, we mainly focused on two aspects of the circular economy, the recycling of fabrics and the renewing/reinventing/development of the energy and transport sector. In the aim for an environmentally friendly path in the future and to execute this, people should accept and be open-minded towards many different options of new forms of energy use and innovations, which can support and influence the future economy, in order to be sustainable.

The primary target of a circular economy is generally acknowledged as reducing carbon emissions in diverse forms. The heart of this mission is always developing the path from fossil fuels to green energy in any business, especially the fashion industry and any technology-and-energy-based industries. Fortunately, the world is currently in the middle stage of the green transition and there have been many manufacturers and organizations paying effort in implementing and developing the circular industry. Nevertheless, the demand for the circular economic model is still low, resulting in the fact that it is difficult for the current green business model to cope in the current market. Under this circumstance, circular businesses will need to undergo the pressure of an unwelcoming market and high costs, while the corresponding economic structure will remain unchanged.

As a result, it is crucial to identify the problems and potential solutions at this stage in order to improve the current stage of the economy. And through this report, we will depict the picture of a green tomorrow, raising everyone's awareness about the necessity of green transition.

PRESENT STATE

“What is happening now?”

The circular economy in the current stage is still developing. The public’s awareness of green power and sustainability is growing, meaning the market for the circular economy is opening. There are weak signals in the market that promote the circular economy and the green transition in society. Many academics, scholars, and analysts are supporting this new economic model, and it is distinguishable that it is a massive trend in different industries. Many Businesses are implementing this new production and consumption model. However, the management of resources, the process of production, and the solution of remaining are still needed to be considered.

“What do we know about current stakeholders?”

At first it should be mentioned that the stakeholders can be divided into 2 categories: Internal and External stakeholders. The internal stakeholders are the employees, shareholders, managers etc. While the external stakeholders are the ones that do not affect a company’s operations directly.

PESTLE ANALYSIS

The **Present State** on the Green Transition.

P Political

International politics will have to aim for decreasing greenhouse emissions and the use of fossil fuels through policies effectively. Reaching net zero emissions of greenhouse gasses by 2050 or earlier has to be the main target of politics. Economic growth decoupled from resource use is also important. New and strict political guidelines like policies and political actions will improve all economic sector's potential for development. As a result, more investment and progress can and will be made in the different sectors.

Ethical aspects also have to be recognised in politics and more transparency regarding the Green Transition has to be achieved by policies as soon as possible. The previously mentioned aspects have to be included in the circular economy and political decisions have to make sure that every path towards the Green transition is being supported through political decisions and policies, in order to achieve the needed targets.

Economic

Some present factors in the circular economy have a huge effect on the economy. They can impact the profitability of a company and the way it is able to do business. Factors like the level of economic growth, inflation, raw material, and energy cost are some of the bunches that exist out there.

A circular economy, like everything, has its ups and downs, and it is our job to identify them. Let's start with the down's.

For example, in order to create a company based on a circular business model, a greater upfront investment is necessary in the same way it may also require more resources that involve a greater investment that can impact a company’s cash flow and therefore lengthen the time on return of the investment.

Another example can be found in the refurbishment and repair of pre-existing products. For that, the company needs to invest more money in the pickup system for the products and also in the skilled employees needed for the job. In some cases, a circular business model may even be not feasible, due to high takes on labor.

A final bad factor can be seen in the fact that by remanufacturing and reselling existing products, the company may risk cannibalizing their own sales on new upcoming products.

Now the up’s.

The main advantage and driver of a circular based business model in the volatility of resource prices. Risky price fluctuations encourage companies to take back products they have already put on the market. By doing this, the company can reduce its dependence on externally sourced products, and the materials they are made of.

Another good factor is that by increasing the remanufacturing or refurbishment of used goods, we can now see certain products more affordable while they keep their quality high (ex: second hand clothing or refurbished smartphones). This drives to more sales and therefore a higher amount of cash flow.

S Social

The social result in a circular economy mainly involves demographics of the workers for the productions and the eventual consumers and buyers of the products.
It is arguable that the process of recycling or reusing plants and the redesigned products often have health and safety concerns. There is always the dispute about forced labor, child labor, and unemployment due to the cultural barriers and career distribution changes. However, the norms of repairing, recycling, redesigning, and reusing in businesses are distinguishable while influencing people's daily behaviors. The green transition of the circular economy can be fully presented under the conditions that people's shopping mode shifts from fast to relatively slow and the change in consumer preferences that may not be the first priority. Although obsolescence of certain products is an obstacle, countries are limiting and censoring the property of a product before its launch to a certain extent. Fair wages, working-life balance, and a community environment are the keys to increasing the worker population and the consumers, solving many social controversies.

Examples:
Norms: vintage shops, electric cars ;
Customs: recycling eg. clothes, car engines, furniture etc. ; Reusing second-hand products;
Shift in career distribution: the transition to a circular economy creates new jobs or promotes some jobs' demand while reducing a large number of jobs in mainly the manufacturing sector.
Countries are refining circular economy action plans, demanding additional measures and tightening recycling rules.
"In February 2021, the European Parliament adopted a resolution on the new circular economy action plan demanding additional measures to achieve a carbon-neutral, environmentally sustainable, toxic-free and fully circular economy by 2050, including tighter recycling rules and binding targets for materials use and consumption by 2030."

Technological

Technology is a theme of constant change in this 21st century. Technology also has a great impact on the way we sell, produce, market, and dispose of a product. Factors related to this are always of great importance and must be considered carefully for the future of a circular economy.

Due to this constant change, sometimes a company may not be able to adopt a circular style because of the ever-increasing performance requirements. We always want prettier, faster, better, new, and frequently refurbish, or remanufacture a product that can't respond to that demand.

Despite this, we can see technological factors that work well with the circular model. For example, in the car industry, we see more and more the application and evolution of technologies like 3D printing. By being able to produce a part on demand we can remove and reduce the need to produce and store large amounts of goods or parts that may never be used.

Technological developments have led to successful demonstrations of alternative fuel solutions for the mobility industry. By shifting the focus on petrol, and enabling a development of a single alternative fuel market, we can greatly reduce our crude oil necessities that prejudice our environment.

Legal

Because of the continuous development of the recycling industry, it is also important to develop relevant laws to protect the rights and interests of consumers. Now more and more consumers are willing to choose to buy environmentally friendly products, but environmentally friendly products are often accompanied by higher prices. When consumers are willing to choose to pay more money

for the sake of ecological contribution, perhaps there can be laws that can ensure that they are buying truly environmentally friendly products.
In fact, the EU is also making efforts to build relevant legislation to protect the rights and interests of consumers..
The Commission is proposing to amend the Consumer Rights Directive to oblige traders to provide consumers with information on products' durability and reparability. In addition, the rules will strengthen consumer protection against untrustworthy or false environmental claims, banning 'greenwashing' and practices misleading consumers about the durability of a product.

E Enviromental

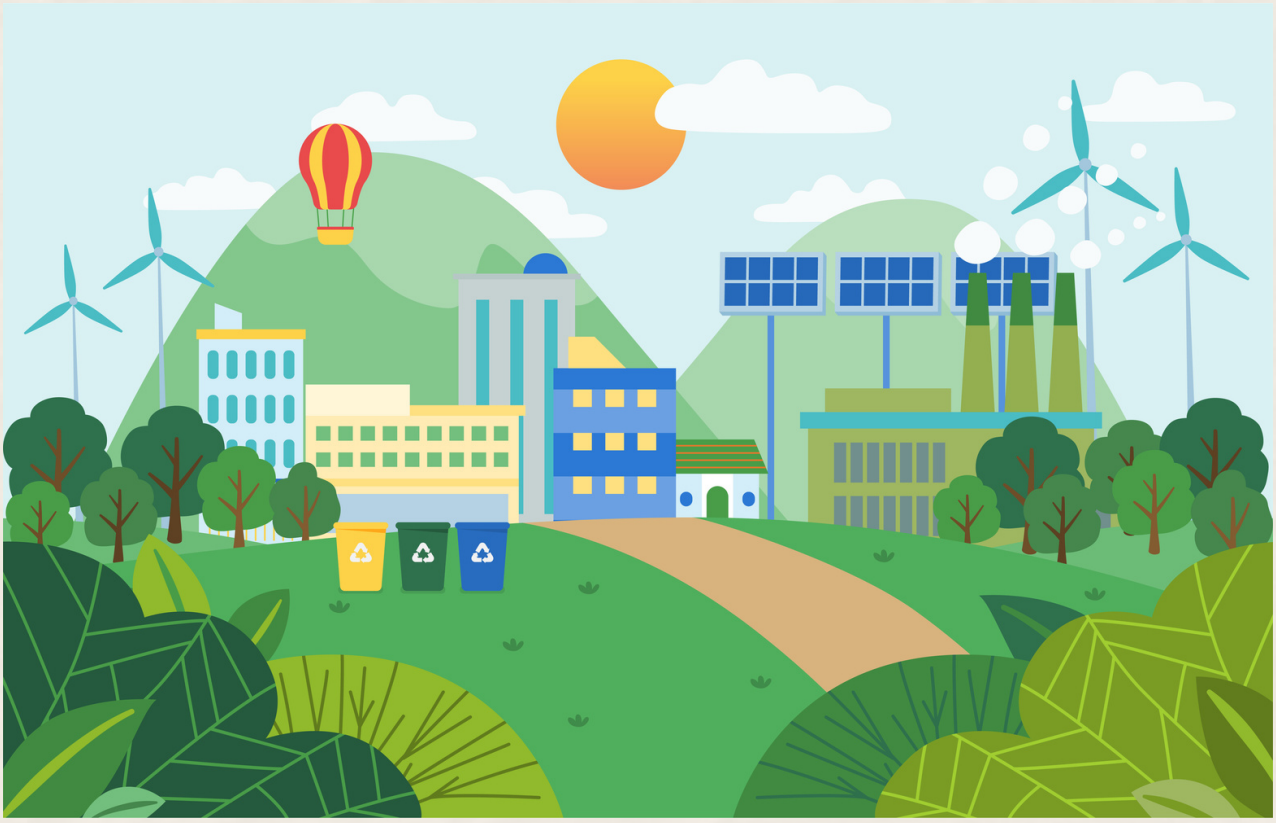
Regarding the energy transition, the increased use of renewable energy in different sectors is going to have a positive impact on the environment. It is inevitable to reduce greenhouse gasses as soon as possible to stop climate change. As an example, the use of green hydrogen in the future will most likely decrease greenhouse gasses in the world effectively. The European Union has launched a hydrogen strategy, which will probably have a huge impact on the environment in the EU and especially influence the renewing of the energy, transport and industry sector in the future. Regarding the circular economy as one important part of the Green Transition there have been many fields that are influenced positively by the circular economy.

Positive environmental impacts create future prospects and new solutions to tackle climate warming and secure global sustainability.

Example from the apparel industry:

The apparel industry is a significant contributor to biodiversity loss. Factories in the apparel supply chain are directly linked to soil degradation, waterway pollution and natural ecosystem transformation. The five biggest contributors to biodiversity loss in the apparel industry are Cotton agriculture, Wood-based natural fibers/man-made cellulose fibers (MMCFs),Textile dyeing and treatment, Microplastics, Waste.

To this day, many countries still do not recycle plastic packaging waste and used clothing, but instead dispose of it in landfills and incinerators, endangering biodiversity. Conscious consumption, production and reuse of materials helps protect natural habitats, and when we recycle clothing, plastic packaging waste, and electronics in a safer way, we can protect ecosystems from chemicals and waste. Recycling supports biodiversity in many different ways and is one of the reasons why we advocate for a circular economy system.



FUTURE STATE

01. Cost-efficient products.

The circular economy, by moving much more biological material through the anaerobic digestion or composting process and back into the soil, will reduce the need for replenishment with additional nutrients.
For example: H&M aims to produce a circular product that uses minimum resources (material, financial, human). Their target is to produce a long lasting material that can be recycled and brought back to the cycle.

02. Upgradation of manufacturing processes.

Manufacturers are upgrading the management processes by streamlining decision-making about operations, digital transformations and enhancing the customer experience while improving the return on investment.

03. Reduction of the carbon footprint.

Businesses opt for superior value propositions to integrate effective and efficient functionalities to a circular product

04. Improve circular/green product design.

The revised value drivers emphasize increasing resource efficiency, reducing material consumption, extending the lifespan of a product with enhanced residual value, and closing the loop.

05. Manufacturing customized products.

Improving product design, attracting new customers while upholding the existent customer segments by providing add on technical and maintenance support.
For example: H&M is providing incentives to their customers when they return their used items to the store.

06. Development connected Supply Chain Management (SCM).

SCM helps a firm measure and monitor the performance parameters that establish a benchmark to regulate value-added operations. Therefore, it has become a vital task for firms to identify and infuse innovative, sustainable, and cost-effective resolutions into their supply-chain network.
For example: H&M emphasize on working closely with their suppliers to make sure they are using the raw material that is not harmful and can easily be reused. If the product cannot be reused then they try to use a component of the used product as an element for another product. Alignment of the supply chain network supports the circular production process as it provides transparency, flexibility and agility to a smooth material flow.



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If we look at H&M Group's example, they are focusing on achieving sustainable growth prospects in the fashion industry. Their internal stakeholders are involved in developing strategies that promote the Circular economy paradigm by minimizing the use of resources and offering the reuse, recycling and repair policy to the customers. H&M are creating a 3-step circular ecosystem to enhance a positive impact on biodiversity.

Step 1: Producing a circular product

H&M aims to produce a circular product that uses minimum resources (material, financial, human). Their target is to produce a long lasting material that can be recycled and brought back to the cycle.

Step 2: Alignment of Circular Supply Chain

H&M aims to produce a circular product that uses minimum resources (material, financial, human). Their target is to produce a long lasting material that can be recycled and brought back to the cycle.

Step 3: Return policy for the Customer

H&M is providing incentives to their customers when they return their used items to the store.



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PESTLE ANALYSIS

The **Future State** on the Green Transition.

P Political

In the future international politics need to aim for decreasing greenhouse emissions and the use of fossil fuels through policies even more effectively than in the present. As described in the present state part, reaching net zero emissions of greenhouse gasses by 2050 or earlier has to be the main target of politics worldwide. Even though after reaching a carbon neutral time new policies should be directed towards a carbon negative era. International organizations and governments of all states will inevitably have to build new paths towards an energy effective, climate neutral and fair transition. New, more clear and all involving political guidelines like policies and political actions will be much needed in the future to improve all economic sector's potential and fight climate change. Countries and their governments will need to involve all different groups of the society and meet the interests of all people in a fair yet reasonable way, which will hopefully accelerate the green transition. Politics have to adapt to the transition in order to be able to show and give people possibilities and knowledge of green alternatives. On the

other hand, risks that involve huge investments of for example renewable energy sources and sustainable development have to be taken in order to achieve a sustainable future of the society needs and a well functioning economy, which could build on the circular economy. Also international climate politics have to strengthen the transparency of the transition in the future and guarantee people access to how investments regarding a green and sustainable transition are made. More investment and progress can and will be made through political actions and guidelines. A good example of the present on which future policies can be built is as earlier mentioned the **European Green Deal**. The European Green Deal gives clear guidelines for all EU countries but can also provide possibilities for other countries or continents. Hopefully and most likely it will impact the Green Transition effectively.

Economic

As it comes to economics the future model of the economy has to and will hopefully be an economy, which focuses on economic growth decoupled from resource use and especially free from fossil fuels. One of the most important missions is to get as many investors for the Green transition as possible. The investments regarding the Green transition need to rise in renewable energy and the infrastructure, which is needed to expand. Through increased investments new innovations can be made and new jobs created. In many countries the Green transition can and most likely will be a really important possibility to develop their social welfare. The social background influences the transition through the uneven possibilities of the standard of living. An aspect, which has to be considered regarding the impact of the social background is, that even though changes of the economy or energy-use are necessary too fast and

unplanned decisions can impact the social well-being unexpectedly. If or when the circular economy as a possible future form of the economy has matured people might react very surprised how good this form of economy can work and how much it can help to make the economy more environmentally friendly. Also it could be that a new positive mindset towards a next model of the economy with the circular economy as a main motor of the economy will bring up new ideas of green reforms, new technology or innovations and in that way help the Green transition to develop and strengthen it.

It is important for investors to see the value that a green transition of the economy can bring. As we all know, the upfront financial costs to reach the green transition goals are significant. For example, if the EU meets its 2030 climate targets, it will need an average of 260 billion euros of additional investment per year, which is not enough to be supported by the EU's own funds alone, so member governments and private investors should also be encouraged to invest more to fill the funding gap. So what kind of returns can a green economy bring? Studies show that the development of a green economy will increase the EU's foreign exports by at least 25 billion euros per year and save up to 350 billion euros per year in energy costs. Resource efficiency improvements will significantly reduce the cost of producing products and can effectively improve the market competitiveness of enterprises. When more investors are made to see more tangibly the value potential offered by a green economy, more money will be attracted and thus the green transition can be further accelerated.

S Social

The importance of a green transition may be relatively different for societies at different stages of development. Less developed regions may not have the financial or technological resources to support a green transition. In that case, if there is already support from more technologically advanced regions, helping the

less developed regions to develop a green transition is a beneficial act for the overall global green transition. At the same time, the green transition will also bring the whole value chain upgrading and integration, creating millions of new high-quality jobs. This is also crucial for the development of society as a whole.

The cultural background is of great importance and has to be taken into account, while finding solutions for a better future. Every culture can add new ideas or points of views in its own way and contribute with its own expertise to develop the Green transition and impact it effectively. All cultures can learn from one another in many aspects, for example in innovation, technology, building or economical aspects, which will develop new possibilities for the transition.

Technological

A great amount of value can be found in technological advances on a path to a green transition. For the future, we must be conscious about the impact each and single one of our products makes on our planet. Although technology is in a perpetual growth and the need for the newer, faster and more efficient is now urgent, more than ever, we need to project new products in order for them to be resistant to obsolescence. By making a product more resistant to the passage of time and removing any type of deadline to its ending, we can greatly reduce technological waste that makes a great part of the environmental impact our planet is suffering right now.

There will be occasions, due to this growth, where a product won't be able to be projected to last as long. For those, as much as the others, companies should make an effort to develop pickup systems so that a technological product at the end of its practical life, may be recycled and put back into the system, reducing the impact of its existence. For this to happen it is also important that a product must be

well-designed in order for each component to be separable from the other and in order for it not to break or be impossible to remove and hereby recyclable. In the future, in order to create greater value for technological innovations in a green transition, these innovations should strive to help every part of this transition to a green future. Technological developments like 3D Printing that facilitates the creation of parts on demand and with sustainable materials or Biological Fuels that offer new alternatives to the ending fossil fuels should be looked at as great developments, as value creators for the future and serve as a model for new innovations that are yet to come.

Legal

In the future, countries or organizations should provide more protection for consumer rights, as well as more stringent and accurate regulation of the industry and market. For the producers of sustainable products, the production and emission standards of sustainable products should be standardized and monitored by an authority. Stricter and more sustainable laws and regulations should govern the treatment and discharge of pollutants. There should also be more specific measures to regulate the promotion of sustainable products, advertising and other market practices to prevent sellers from exaggerating or selling products that are not actually sustainable under the label of sustainability. Likewise, the rights of consumers, which are on the other side of the fence, should be better protected. When consumers choose to buy sustainable products, they often pay a higher price, and when people are willing to make a monetary sacrifice or investment in sustainability, it should ensure that consumers are able to buy products that match the description.

Enviromental

Green transition plays an important role in the environment. One of the biggest pollutants in the world is the fashion industry. The fabrics and materials used in clothing, as well as the manufacturing and distribution of clothing, all contribute to many types of environmental pollution, including soil, water, and air pollution. The overproduction of clothing for the fashion industry and the improper usage of synthetic fibers are the main causes of the textile industry's ranking as the second largest polluter of local fresh water worldwide. The apparel sector is among the greatest global polluters. Numerous types of environmental pollution, including soil, water, and air pollution, are caused by the textiles and materials used in clothing, as well as by the manufacture and distribution of clothing. The textile industry ranks as the second largest global polluter of local freshwater due to overproduction of apparel for the fashion industry and inappropriate handling of synthetic fibers. And in the majority of nations where clothing is made, untreated toxic effluent from textile manufacturers is dumped directly into rivers, where it contains significant amounts of lead, mercury, and arsenic. These compounds present a serious health concern to aquatic life as well as to those who live along riverbanks, where they also enter the sea and eventually spread around the world. In trash disposal facilities, 85% of all textiles are disposed of annually, with the same amount of garments to fill Sydney Harbour being burned or dumped in landfills. Today's fashion is viewed as a "disposable" item that must be replaced after being worn just once or twice because it starts to fade and warp. This has an unfathomable influence on the ecosystem. With the fashion sector contributing 10% of global carbon emissions annually, the fast fashion business is incredibly harmful to the planet's resources. Tens of thousands of garments are manufactured every day in the thriving global fashion

industry of today, and the energy used in this process results in the generation of a significant amount of greenhouse gasses. The majority of fast fashion clothes are now made of synthetic fibers (polyester, nylon, acrylic, etc.), which need more energy to produce than the natural fibers we grow.

The emergence of clean energy will solve the pollution emitted by machinery (such as some machines that pollute the environment) and reduce the pollution of the environment. The use of second-hand clothing will reduce the over-exploitation of nature and will also save time and labour costs in the manufacture of clothes, mainly because it will reduce the over-mechanisation of machinery or textiles, thus reducing the pollution of the environment. At the same time, in the context of sustainable development, the green transition in clothing materials can be made from materials that can be used sustainably, in the context of cost control and at the same time ensuring resource conservation.

Threats to biodiversity: Indiscriminate logging, overgrazing, unreasonable lake enclosure, swamp reclamation and overuse of land and water resources have all led to the destruction or even disappearance of the living environment, affecting the normal survival of species, and a considerable number of species have quietly become extinct before humans are aware of them.

The green transition of the future is a win-win strategy for companies, entrepreneurs, investors, politicians etc. When consumers know that a product has a protective effect on nature, it will inevitably have a promotional effect and will cause consumers to buy it, thus a win-win situation for both sides. The initiator of such a strategy is inevitably a company, or it is promoted and invested in by the government, or by national and international organizations, so as to advocate for the population. The green transition is therefore an inevitable trend, as the resources of the future will be depleted by human overuse, and new or clean sources of energy need to be conserved and discovered to control the deterioration of future trends.

PERSONAL INTERPRETATION

Karolus Kotilainen.

Climate change is threatening each and every one of us. New solutions and innovations are needed to accelerate the Green Transition. International politics and a continual cooperation between all states are some key factors in order to achieve important goals to prevent more damage that has already been caused to the world. International politics, clear and fair new policies but also personal actions are factors, which can have positive impacts on the environment in the near future. This is of huge importance yet people might tend to get used to often obvious facts and phrases from political conferences for example regarding the importance of the Green Transition. After getting too used to something or too comfortable people might tend to forget about the importance and get lazy in achieving development.

Let's take a step back to go more steps forward and ask ourselves: What do we people need to live and more importantly what will the coming generations need to be able to live on the planet earth? What are some basic needs of human beings and what should we especially protect?
Firstly it comes to my mind, that as human beings we need water and food to function. We need fresh water and a food security that is built to overcome future challenges. As we think about the values of the green transition we should and cannot forget the basic needs of human beings. Therefore we also inevitably need a well-being nature, which is in balance. Without “normal” temperatures or natural phenomena or even without enough healthy and fresh air people will not be able to live a “normal” life on the earth. That is why we and the future generations are responsible to protect the continuity of life and basic needs.
One other aspect that comes to my mind is the behavior of each and every one of us in our every-day life. With this behavior I don’t refer to the overconsumption of goods in the modern society yet, but on how we interact

with one another, how we take other people into account, how we understand one another, how we learn from one another, how we help one another and how we try to spread knowledge with one another. Even though this might be wishful thinking I like to believe that being nice, polite and always target kind interaction between each other can most likely automatically create something good from where we can build more good, more efficient and also more sustainable paths for the future in order to succeed with the Green Transition in the best possible way. But after these basic habits we need political actions and economical development. We need new forms of economies, which can solve one of mankind's biggest crises. Without new possibilities and innovations, without effort or actions we won't be able to achieve the value of the Green Transition and miss a positive opportunity to keep our environment alive. Even though there are many who might not be interested there can and hopefully will be many who will be interested each new day to take part in the Green transition. With more investments of renewable energy products and with sustainably produced materials it will be possible to lower the costs and gather more people to get involved in the Green transition and also feel involved in it. As our society is built of different groups of people and different mindsets we need to come closer with one another and understand each other's points of view and try to close the huge gap between extreme right and left thinking and decrease egoistic behavior.

In this group we have decided to focus on the circular economy, which is one important form of economy in order to keep up with the global sustainability and the well-being of the environment. Many important policies have already been created and they give us clear guidelines for the upcoming years. The European Green Deal is a good example of Europe's new agenda for sustainable growth. The EU's transition to a circular economy will reduce pressure on natural resources and will also create sustainable growth and jobs. It will also affect stakeholders to invest more in the use of renewable energy or for example the production of green hydrogen. The EU's climate neutrality target must be achieved until 2050 and preferently already before that, in order to prevent biodiversity loss and more. The plan also announces initiatives along the entire life cycle of products, how products are designed, promotes circular economy processes, and encourages sustainable consumption. Finally it aims to ensure that waste is prevented and resources used are kept in the EU

economy for as long as possible. The Green Transition will affect each human being and it will be one of the key solutions to save the planet. The value of the Green Transition is significant and therefore should be developed and implied everywhere in the world.

Shuhan Long.

When it comes to green transition, it doesn't seem to be a very new topic. The concepts of global warming and low-carbon environment have been discussed in the past decade, but what is the difference between the big hit of green transition concept now? Why is the value of green transition worth being discussed? In my opinion, the biggest difference this time is that I really see all kinds of changes in my daily life. Unlike the " empty talk" that used to exist in the news or public service announcements before, I see more and more sustainable products in supermarkets and malls, renewable energy cars, recyclable plastic packaging... More and more people are trying to live a sustainable lifestyle, which is a very welcome change.

What exactly is the value of the green transition? In the past I might have said that its value lies in protecting the environment and healing the planet. But after our discussion among the group, I realized that the value of green transition cannot be generalized. It brings value not just in terms of the environment, but in some way contributes to the transition of human society as a whole. As we mentioned in the pestle part of the report above. The green transition has enormous potential value in political, economical, social, technological, legal, environmental and other aspects. It can promote the development of new energy, and at the same time bring back the old things that can be reused in life. It is the main theme of the circular economy, it can change the way of life of a large part of people, and it has great significance to traditional industries.

As we have discussed over the past few weeks, there is no doubt that the value of the green transition is positive. But can there really be one thing that is without downside or disadvantage? Obviously not. And what are the obstacles and challenges to the green transition? Over the past few weeks I have also recognized the "shadows" of being in the positive concept of the green transition. For investors, the green transition is a long term investment that does not pay off in the short term. No one can accurately predict the

future direction of the green transition, which means that investors may face the risk that all their efforts will be wasted for nothing. For traditional manufacturing industries, green transition will also be a disguised impact. When sustainable transition becomes an industry trend, it will be difficult for smaller factories with a relative lack of capital to develop or purchase appropriate sustainable technologies on their own, thus lacking a certain degree of market competitiveness. For companies that want to make the transition to a sustainable approach, the transition means sacrificing some of their existing benefits. How can investors and companies see the real value of making the green transition investment? How can small and medium-sized enterprises survive the general trend of green transformation? This is perhaps one of the biggest challenges facing the green transition.

I am a biology student and almost all of the science I learn is pure, objective and neutral. Scientific and technological development is certainly an important part of the green transformation, but when science and technology are applied in practice and transformed into real value, they often also become less pure than the science itself. Science and technology are turned into commodities at a price, a part of the economy, and even a soft power "bargaining chip" in the political struggle between countries. Such discoveries are new and interesting to me, and because the value of science is recognized and increasingly valued, it is particularly important for science itself to remain objective and neutral. For example, the challenge of "greenwashing", how to set standards for the production of sustainable products,really requires the rigor and impartiality of science to be strictly regulated.

My biggest achievement during this project is that I have a more comprehensive understanding of the value of green transformation. In today's globalized world, the green transition is not a matter for one country or one organization alone, but something that all of humanity needs to work towards. I was born and raised in China, and now I live in Germany, and I can clearly feel the difference between the two countries in terms of green transition. Germany has been sorting its waste for a long time, and now vegetarianism and sustainable living seems to be a trend among young generations in Germany. China started sorting its waste only a few years ago, but as a country with a large population and a vast territory, even if the changes made are small, they are still a big step forward in the grand

scheme of things. The differences between the two countries are not good or bad, but simply an objective fact, as each country and region is different and the right strategy is the best one, even if there are differences, the efforts made by each country and society are having a positive impact, which is the more noteworthy thing.

Dongqi Guo.

The transition to a green economy is a necessary trend, and there are many different types of environmental pollution. At the same time, the pollution stated in the green transition is a hot topic. I've read extensively on the environmental viewpoint. I discovered that green growth is a basic answer to the pollution issue as well as an unavoidable prerequisite for creating a high-quality modern economic system. The emphasis is on changing the country's economic and energy structures, optimizing the country's spatial development layout, changing the industrial layout of regional watersheds, fostering and growing energy-saving and environmental protection industries, clean production industries, and clean energy industries, as well as promoting comprehensive resource conservation and recycling, realizing circular links between production and living systems, and advocating a simple and moderate lifestyle.

The goal orientation of industrial transformation and upgrading is reflected in green development. The utilization of resources, the lives of people, sustainable economic development, and global engagement all depend on encouraging the green development of the industry.

In my opinion, the variety of environmental pollution is far beyond our imagination, water pollution, atmospheric pollution, nuclear pollution, etc., which may aggravate the extinction of human beings, so the green transformation is very important in the future, and human beings have to learn to make rational use of the various advantages brought about by green transformation to control pollution and over-exploitation of resources.

According to my research, many organisms are forced to die out every year because of the unreasonable production and lifestyle of human beings. "The reason for this is that these creatures are on the verge of extinction and must be protected by the state. The economy accounts for a large proportion

of environmental pollution, life is inseparable from business, business is inseparable from human beings, and human beings are inseparable from the environment, but in the intensification of the greenhouse effect, human beings are awakening to conservation awareness, the era of green transformation has begun, many companies will be a green transformation as a company's development indicators, at the same time, green transformation in a company's influence is very huge, in my opinion, a company will be green energy or In my opinion, it is innovative and challenging for a company to use green energy or technology, and the strategy of sustainability is very important for the whole business sector, so the business economy plays a big role in the green transition.

At the same time, I would like to say that after this Green Transition project, I have learned that a company does not just make a profit, but they also need to play their part in the green economy and that Green Transition is largely about helping the world to become more 'healthy'. The prerequisite for healthy development is the need for human solidarity in solving this problem, and the development of a green transition is inevitable in the future but is only a long-term plan. If the environment becomes better, people's lives will be better and the economy will be boosted, so the development of a green economic transition for companies is undoubtedly a win-win situation for everyone.

Our research is the result of several considerations and studies, from different fields of expertise, with different perspectives and references, as well as research, forecasts, and risk management, to make the project more complete. The green transition is a long-term project, but it is a reflection of the successful application of economic transformation to the economy and human life in the future. At the same time this project has taught me very much and allowed me to improve myself, as well as learned that I have to look at problems from multiple perspectives and analyze them, and for me, the green transition will be one of my future research directions.

Jessica Li.

In the current century, the green transition is unarguably the most popular topic in the world. I have seen different parts of the world attempt to push the circular economy in these few years. The countries are making effort to encourage environmentally-friendly businesses and sustainable customer habits. However, undoubtedly, the circular economy is still facing a lot of challenges even though there has already been legislative and political support. And I think we should acknowledge that it is not a bad sign because it shows the massive possibilities within this model. I strongly believe that the world will not comprise the current self-harming circumstance but instead of being ready to receive challenges and tackle them as a whole.

Before researching the term circular economy, I only have the idea of sustainability when talking about green transition. I was astonished that the circular economy is so powerful that it does not only impact the economic world but also the society as the result of some social issues. Firstly, discussing the direct factor, the economy, I think the biggest problem with the circular economy is the unsupportive investments due to the niche market's imperceptible statistics in workers and customers. For instance, the need for investment in the pickup system for recycling, the employment of designers for the inflexible redesigning process, and the career support specialized in repairing. To my opinion, It is the world's effort to change the situation instead of the capitalists. As the businesses follow the demand of the market, it will be very impactful if the market for redesigned and repaired products expands regardless of individual's intention or indecisive regulations. And I even believe that the law with politically united effort is the only significant necessity to the creation of high demand for the circular economy in the global market, and it should be the top priority for the UN. There is controversy about social issues, specifically forced labour and unemployment. Stating the same point, I believe that as long as the circular economy is globally supported, law and certain supervision can be processed between countries and countries. As globalization allows the ease of trade, it is essential to ensure a secure social and economic environment in every country of the circular economy. Furthermore, I am grateful that our advanced technology makes the circular economy develop quicker and easier. Thanks to the invention of sustainable fabrics and 3D printing, which relate to my personal experience the most. Due to my study

in fashion designs, I recognize these are the resources the fashion industry is using frequently, signifying the transition in this one-of-the-biggest-environmentally-harmful business in the world. I appreciate these creations because it tackles my struggles between my want of a green planet and my pursuit of the fashion world. Also, the new generation's high acceptance of second-hand products surprises and touches me because I understand that accepting a new concept is hard, especially that we, the Chinese, have been infused with the idea of "new is good" from the older generation. I even heard from my mother that she is interested in sustainable fashion, which I think is a sky-rocket approach to the circular economy as the model will be accepted by all the ages meaning that not only the new business will make changes but the existed will too.

I believe green transition is unavoidable due to the contemporary insight it brigns to the society, especially the world after the hit of pandemic. Manufactures and businesses are slowing down and people are slowly adapting to a mostly different living mode. It is an ought for people to change because of the inexorable facts that products cannot be produced as fast as before. And I think the existence of current situation is a sign for the humans that they have to take green action now or else people may get unimaginably horrible results. Humans are now powerful in front of nature, and we should avoid or reduce the occurrence of natural and climate disasters for the deed of survival of human civilizations. These are not exaggeration but a kind reminder of the real facts. The green transition is very valuable, however, it requires a long time to process. Therefore, it is crucial for us to be ready now and start to transform our ways of living step by step.

Gonçalo Valinho.

During my studies as an industrial designer, I have understood that everything is made with compromise. Sometimes when designing a product, we quickly understand that perfect is ideal, but it doesn't exist. That sometimes to obtain a certain shape we have to pay a little bit more, or that in order to have a certain functionality we have to change some parts of the aesthetics so that everything can work smoothly and in balance together. I

do believe that this logic can be applied when we try to understand the value of green transition because after all, value can be seen as a product where dimensions like, politic, economic, social, technological, environmental and legal can be seen as part of this product. The thing is, like every product, we need to understand who is the target for its usage in order to get the most out of its experience and in the case of this perception of value we need to understand to whom this perception is more valuable and who will get the most out of it.

After the elaboration of this work, I think we can agree that world leaders and people in decisive roles in big companies are the main targets of this “product”. By influencing these people on the value a green transition can have, we can greatly influence its evolution in today's world and its impact on our environment. By understanding the targets, we can design the way this “product” we call value and the way it is presented as a group of benefits and compromises in different parts of it in order to obtain balance.

Like every good product, every part has a weight to it when it comes to importance, and that weight can oscillate depending on the target. In my personal opinion, I strongly believe that to these leaders, the economical value is really the most important and the one that can make them change their mind. To help understand my position, I want to recall an analogy given by our colleague Sehrish in a past meeting, where she compared the convincing of people for a green transition to the convincing of people to take the Covid-19 vaccination. We can not obligate them but by working different parts like social and political we can increase the amount of people that take it and with great efficiency, but the thing is, Covid-19 vaccination is free. If vaccination had a cost, maybe the persuading of people using social and political dimensions wouldn’t be enough because in all honesty, money rules the world and the financial capability of one person greatly influences its decision-making. The same is with great leaders and economic benefits, if they can't see the benefit, they won't do the compromise. If a designer is asked to lower its product aesthetic in order to fit a functionality that is useless for the product, negative will be the most probable answer because for him, it doesn't make sense compromising if there is no benefit to be gained. If it really is useless or not? We don't know, but probably whoever was in charge of making the designer understand the value of the

functionality, failed.

In conclusion, I personally believe that the value of green transition and its implementation in the real world depends greatly on the perception of its economical value. If we can convince the people who matter that this is the only possible future where they can find great profit, then we can assure that this transition will most likely happen and that we'll have a well-balanced perception of value.

Sehrish Atif

In my opinion, the green economy is considered an eco-system that aims at reducing environmental risks and ecological scarcities. It aims for sustainable development without degrading the environment. The green economy is a prerequisite for the circular economy (CE) paradigm because it is closely related to ecological economics, but has a more politically applied focus. The CE concept embraces the new and innovative techniques for creating the values for both the consumers and the company itself that was not previously attained. The principle of 10R explains ways for value creation, such as Reusing the used product or using its component as a byproduct for a new product; rethinking the BM; reducing the usage of virgin resources and enhancing its efficiency; reusing the used product by outsourcing; repairing and maintenance of a defected product; refurbishing and restoring by upgrading it; remanufacturing, i.e. using a component of the discarded product in a new product with same functionality; repurposing a redundant product with different functionality and recycling of products or material. In short, the CE is the restorative and closed nature of the production cycle with the “green” nature-like technologies application which reduce greenhouse gas emissions, slow down the temperature rise on the planet and preserve the environment. Therefore, the businesses are instructed to adopt a systematic change to implement CE paradigm within their business model.

ATTACHMENTS

List of all signals identified:

1. Uncertainties of the green economy（risk）https://www.shs-conferences.org/articles/shsconf/pdf/2021/12/shsconf_sahd2021_01010.pdf
2. Circular Economy applied to real-life: The Circular Value Chain of H&M　The Value in Green Transition Mid-report
3. Polestar 2 brings changes that make building the car more sustainable. https://www.kbb.com/car-news/polestar-2-price-increases-for-2023/
4. Goodyear's New Tyre Development https://sustainabilitymag.com/sustainability/goodyears-circular-tyre-innovation-for-commercial-vehicles
5. Sustainable hydrogen economy https://www.fch.europa.eu/sites/default/files/file_attach/EG0321338ENN_002%20%28ID%2012364788%29.pdf
6. Circular battery economy https://www.sciencedirect.com/science/article/abs/pii/S2352152X19302944
7. Buying second-hand clothing trends https://thefashionstarter.com/2021/12/14/the-rise-of-the-second-hand-vintage-and-resale-trends/
8. The limitations of fabric recycling https://www.recovery-worldwide.com/en/artikel/the-limitations-of-textile-recycling_3411757.html

https://op.europa.eu/en/publication-detail/-/publication/45cc30f6-cd57-11ea-adf701aa75ed71a1/language-en/format-PDF/source-170854112

Political evidence: https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en (European Green Deal)]
https://transport.ec.europa.eu/transport-themes/clean-transport-urban-transport/alternative-fuels-sustainable-mobility-europe_en

Social evidence: https://www.forbes.com/sites/gulnazkhusainova/2021/01/28/the-secondhand-market-is-growing-rapidly-can-challengers-like-vinokilo-thrive-and-scale/?sh=4bdf24b7ccb6
https://www.boardofinnovation.com/blog/bringing-social-impact-into-circular-economy/#:~:text=The%20main%20social%20concerns%20related,are%20employed%20in%20recycling%20facilities.
https://www.europarl.europa.eu/news/en/headlines/society/20201208STO93327/the-impact-of-textile-production-and-waste-on-the-environment-infographic

Technological evidence: https://transport.ec.europa.eu/transport-themes/clean-transport-urban-transport/alternative-fuels-sustainable-mobility-europe_en

Legal evidence: https://www.recycling-magazine.com/2022/03/30/commission-proposes-new-consumer-rights-and-a-ban-on-greenwashing/.