GRENOBLE ECOLE DE MANAGEMENT

CHAIRE ENERGY FOR SOCIETY

2023 EDITION

Carbon-Neutral by 2050

Dive into the Imagination of Our Students

Sommaire

Edito	4
Letter from an Old Friend by Augusto Monnerat	6
My Diary 2050 - The Climate Generation by Lise Fourrier	10
The more we cooperate, the less we sacrifice by Yuliia Chorna	15
Visionnage 2050 - I plant, I sow, I water, I cherish, I harvest, I sell, I plow, I prune, and it starts all over again by Juliette Samuel	18
2050 - An ideal lifestyle in Switzerland by Victor Bohnet	23

Edito

About this report

Describing the day of a character of their choice in a carbon-neutral France in 2050. This was the task given to the second-year students of the «Program Grande Ecole» (PGE) at Grenoble Ecole de Management (GEM) as part of the course «Technological and Social Innovation to Transform the Energy Sector,» and to third-year international students of the «Global Management- Bachelor in International Business» (BIB) as part of the course "international contemporary issues", from which we present a selection here.

But why ask students to undertake such an unusual exercise? Because transitioning to a carbon-neutral society requires renewing our collective imagination and reshaping our relationship with energy and nature. As part of the «Fabrique des Récits,» co-founded by Ademe, this exercise encourages students to unleash their imaginations. Utopia or dystopia, individual or collective sobriety, unconstrained or frugal technological innovation – each story reflects the anger, hope, and expectations of students facing a challenge that will undoubtedly have a significant impact on their lives ●

Anne-Lorène Vernay, Associate Professor and Member of the Energy for Society Chair

Grenoble Ecole de Management and the Energy for Society Chair do not endorse or reject the opinions expressed in this report. They stem from the work of our students and should be considered as their own.

About the Energy for Society Chair

Research conducted within the Energy for Society Chair examines the impact of new energy services that reconcile energy transition, citizen adherence and business attractiveness.

Through this publication, the Energy for Society Chair at GEM is delighted to support this initiative launched by the professors of GEM's «Technological and Social Innovation to Transform the Energy Sector» course in PGE, and the «International Contemporary Issues» course in the Global Management track of the Bachelor in International Business. What better exercise than to ask our students, tomorrow's decision-makers, to imagine the future in order to truly understand 1) the mindset they have towards climate challenges, 2) how they integrate and appropriate the fundamentals presented in class, and 3) envision the solutions of tomorrow.

These essays were written in the spring of 2023, as the world experienced the hottest months ever recorded, just a few months after one of the most severe energy crises… Let's hope that their narratives serve as an awakening for some and a source of hope for others, or even both at the same time.

Enjoy the read! ●

Carine Sebi, Associate Professor and Coordinator of the Energy for Society Chair

Letter from an Old Friend

This essay deals with a perspective of the year 2050, where humanity and the planet are no longer in a stable relationship. It gives a glimpse of what could be our future if we don't change our behaviors.

Every day it gets a little hard to survive. I'm very old, I don't know how many more years I have left. I feel tired. I don't exactly remember when it started. Around a few years ago, some friends warned me that I could be sick, experts in the area. In the beginning, the symptoms were mild, almost unnoticeable. That lasted for a long period, but I had no control over what I could do. More and more people became worried about my condition. It was a nice feeling, the feeling of being taken care of, that others cared about me.

For as long as I can remember, I was always that friend who would give and give and would rarely get anything in return. I never complained, and even if I did, it made very little noise. I cried a lot. My tears were a relief for me, but I knew others didn't share that feeling. Sometimes it would flood other people, and they would blame me, as if I was punishing them. But what they couldn't see was that they were the reason for my watery eyes. Every year, my mood would get worse and worse, little by little. I couldn't enjoy the seasons anymore. During summer, I would feel abnormally hot. In fall, the leaves on the ground meant more than time passing, for me, they meant all the unfinished things that I could have done, because it would make me reflective, I wasn't sure if that would

Author

My name is **Augusto Monnerat** and I'm a Brazilian student. I study Economics at PUC-Rio and I did an exchange program at GEM during the first semester of 2023. I'm passionate about photography and having experiences abroad.

Progamme: Bachelor in International Business - Global Management- 3rd year

be the last time that I would see the bare trees in my sight. When winter would come, that was when I would really close myself. I would be so cold to everyone, even with my closest friends. I know that my coldness wasn't the best reaction to the rest of the people. I know that my mood affected others, but they were the reason for my frigidness. And then spring would come. It would give me a little hope, but every year, less and less flowers would bloom because I simply did not have the energy to enjoy life anymore. My sickness was, gradually, changing me and stopping me from being my true self.

My health concerned a lot of people, even created a debate whether I was actually sick or if I was being dramatic. Those who thought my condition was an important deal for their lives did everything they could to help me get better. They would change their habits, stop doing certain things, in hopes that something would improve my health. Some of my friends stopped eating meat, because they knew whenever someone ate meat, I would get incredibly thirsty. I felt like all the water in me was being drained from my body. Others stopped traveling by plane, so they could stay close to me, in case I needed anything. They wrote letters to each other, saying what they would do to help me. Some promised to lower their houses' temperature because they knew my fevers couldn't handle the heat. My American friend promised me that they would change their lifestyle to help my sickness. My European friend said that they would do it the same.

A good Kenyan friend of mine, Elizabeth Wanjiru Wathuti, helped me a lot during a certain period. She would give me trees and plants that I loved and incentivize others to do the same. My Swedish friend, Greta, would organize marches and rallies, in an attempt to draw the people's attention to my condition.

However, even though it seems that a lot of my friends were concerned about me, they were more concerned about which of them would be my savior. They were not worried about me, I was naive. They were worried about their own image, their own status, of how they would look like, being The One Who Saved Her. Instead of working together to help me get better, they closed themselves, almost like they were competing.

This mentality only made things worse. People were so concerned about them that they completely forgot that I was getting sicker as the days passed. It began to set a trend, a trend on how they would react to each other's promises. They would be so focused on their actions that they completely ignore the reason why they were acting.

There were also the ones who thought that I was faking it. They were so narrow minded that they couldn't comprehend how someone could be sick. They had it all, they had their reasons to believe that. My health affected them the same way it affected my friends. Whenever they saw me, they would say "You don't look sick, look at your smile, you're shining", and solely based on that, they would come up

with their own conclusions “She’s not sick”. The problem behind all that was that they would take their conclusion and act like it was the absolute truth. These deniers would discuss with my concerned friends and gaslight them into believing they were right. But my supporters were strong, until they couldn’t be strong anymore.

The downfall was when my close friends tried to implement a new policy in our neighborhood. This new policy would change the things we did a little bit. We were supposed to decrease our consumption of goods, so more resources would be focused on my well-being. I thought it was incredible. Finally, my condition was being addressed and my friends were doing something to improve my health. However, the ones that did not believe in me were not satisfied with this new lifestyle. That created a very long debate concerning what would be the future of our neighborhood. Countless meetings were held, the supporters were even more active as far as the deniers were more and more vocal about their disbeliefs. This debate became so heated that it would exhaust me. It would even make me even more sick. The damage that it would make to my body was indescribable. The plants that they gave me were all burned down, the flowers that bloomed in the spring did not bloom anymore. The cold of the winter was polar. The heat of the summer was burning. I couldn’t live under those conditions, and neither could they.

Gradually, my circle of friends was becoming smaller and smaller. Those less privileged suffered the consequences first. That’s not how I wanted to be; I didn’t want to impact so negatively the life of the marginalized. But unfortunately, the way our neighborhood was structured made them more vulnerable to my symptoms. I couldn’t give them the gifts that I used to give; I couldn’t provide the supplements that I used to provide. I simply did not have the ability to take care of them anymore. Then came the middle class. Some of them were able to get through it all. But the majority could not bear the consequences of the situation that my condition put them through. With the new policy implemented, their supplies were limited, so when the dilemma came, they did not have much to sustain themselves. When each of them would go, a part of me would also go with them.

For the last few years, only the rich were able to handle the scene. The ones that would harm me the most in the past were the only ones who were left in the end. I couldn’t put into words my feelings. It was not fair. They would live their lives the way they wanted to, without thinking of its implications, while others were dying for me. I loved all my friends and neighbors, but I simply couldn’t feel a sense of injustice being present in that situation. I didn’t wish that they were not there with me, but I couldn’t bear the fact that, taking into account their past actions, they were the only ones who weren’t affected by my health.

Nowadays, we cannot call “living” the way we handle this situation. The ones who are still here fight to get a chance to breathe clean air. I feel like I am covered with a

heavy blanket that traps all dirty air below it, making almost impossible for anyone to get a glimpse of a fresh breeze. Trees are now a commodity, which its value is skyrocketing as the days go by. The soil is not proper for farming anymore. It is very rare for a crop of any kind to grow, giving the conditions of our atmosphere. The only output that is somewhat reliable is corn. It is the only aliment that I can provide. We had to change our diets to adapt to what we can grow. Meats and other types of animal protein are considered a luxury good, with a very scarce supply chain. Mushrooms and the fungi family are our most important source of protein in our basic diet. A lot of areas in our neighborhood are uninhabited, because of the changes in the climate that changed the land. Many houses were flooded due to the increase of sea levels, Forests were burned as a result of the desertification of certain territories.

I did all I could but is never only up to me. We, as a community, could've thrived with what I provided, but the human being as a species is not made for cooperation. Greediness and selfishness are in their essence. It is in their natural behavior. It is impossible run away from it. It's a shame that that was the outcome, they won't get another shot at this. As their Home, I'm disappointed. I expected better. They could've been better. We could've been better ●

My Diary 2050
The Climate Generation

Through the diary of a woman and mother, discover the paradox of the French energy transition. Between the sometimes absurd restrictions imposed by the government and responsible local initiatives, net zero has been reached, but at what price? The absence of carbon emissions raises questions about the means used to achieve it, and what this implies for future generations, particularly with regard to the nuclear issue.

Monday 21th March 2050

I hesitated for a long time to have children. Partly because of the responsibilities, time, and energy they require, but also and perhaps especially because of climate change. When I was young, we were called eco-anxious, maybe we were just realistic or maybe we understood before others what awaited us. With my friends, we talked about our family desires, knowing full well that our children would never experience the world we grew up in and that the planet we would leave them would be even more polluted from within.

The plan was to limit the temperature increase to 2°C. The plan miserably failed on May 8, 2045. What irony, the anniversary date of the end of the greatest war in history marked the beginning of a whole new stage of a war against which we had no chance. At that time, they still said that technology would save us, but the pollution-cleaning machines, despite promising beginnings, did not work fast enough or well enough. After a long period of inaction, the government realized that doing nothing was no longer an option.

Author

Lise Fourrier, a student in the RSE program at GEM, is a work-study student at BNPP Securities Services. She is interested in environmental issues and our daily impact on the planet. With this article, Lise wanted to reflect current issues that can sometimes give rise to doubts and worries, particularly among young people wondering about their future.

Program : PGE 2A alternance RSE 2023

Within ten years, France experienced more changes than during the industrial era. First, imports were limited. The major Chinese brands that ruled as empresses over fast fashion and cosmetics were gradually banned. Then, carbon taxes multiplied on planes, gasoline, gas, meat, basically anything that did not resemble quinoa. The use of recreational technology like social networks or series was limited to one hour per day per person. These sufficiency measures did not garner unanimous support.

There were always more regulations, and the same pattern repeated on television: the adoption of new conventions, rebellion, repression. Every Saturday, Paris became a battlefield opposing protesters and law enforcement, ravaging and burning whatever could still be destroyed. The regions were not spared. The south of France, facing water restrictions, rebelled regularly.

The promulgated laws no longer made sense – even worse than during the time of Covid, if you ask me. One day it was the ban on non-essential air-conditioned spaces (including nurseries and schools), another day it was the ban on consuming avocados (but only those not from the overseas territories).

And while debates continued in the National Assembly, we were dying of heat at 30°C in the middle of November, with water restrictions for half of the French population. The desalination plants may have been operating almost continuously, but the volume they produced was far below the needs of an entire nation. One could have believed in a revolution, but I think deep down no one had a better idea. We followed the directives, trying our best to inform ourselves about the constantly evolving sorting instructions, never uniform across the territory, composting and reusing what could be reused.

Gradually, the protests became less frequent, and the movement lost momentum. The air was filled with a sense of general exhaustion. I don't think I ever wrote it, but those years were complicated. I was afraid that everything would collapse without warning, and at the same time, I dreamt of it so I could finally tell the world, «We told you this day would come, and after this, it would be too late.»

Today, France is carbon neutral. This plan succeeded, but at what cost? Renewable energies have developed, and private gardens have become wind turbine parks with significant tax deductions, but there are already former giants crumbling everywhere, and we don't know what to do with them. Dismantling is too expensive, recycling the batteries is complicated, so we abandon these areas, turning a blind eye. Everything not produced by solar panels and wind turbines comes from nuclear power. The five plants under construction opened in the last ten years. We need more and more energy without realizing that this insatiable thirst is the cause of all our problems.

We bury nuclear waste, saying that it is better than CO2 in the atmosphere, but one day our ostrich-like attitude will turn against us, and our children will have to deal with what we never wanted to confront. We hide behind the beautiful result of zero emissions, forgetting how it was achieved. Solar panels? A large part of them are not from here. Their construction? Outsourced, of course, not to mention the extraction of minerals necessary for their manufacturing. It's a hypocrisy that is becoming increasingly prevalent, only highlighting what suits us. It's true that we use less energy personally, but companies use more and more. The servers continue to run, the air conditioners to cool them as well. But they are not in France, and we don't count them in the calculations. I try to emphasize these points of contradiction in my reports within my company's Compliance department, but in vain. We don't violate any European rules. What a charade!

Life resembles a bad episode of Black Mirror; a mix of technological advances and senseless social constraints. Nevertheless, some innovations are good, and I wish they existed earlier. I love the second-hand shops on every street corner or the new apps that connect different expertise. The other day, I sewed a costume for a little girl, and her pastry chef mother taught me how to make sugar glass in exchange.

I also love the residence where we moved a year ago on the outskirts of Strasbourg. Here, everything operates in a closed-loop system. It's like a bright and clean complex bordered by green fir trees, where sharing is the key. We share washing machines gathered in a laundry room on the ground floor of the building (bitter-sweet memories of my past student life), bikes parked in the courtyard, and even cars through an individual card system.

I love that recycling and being mindful have become part of our daily life. Rainwater supplies the entire building for showers, toilets, and dishwashing, and it can be replaced by running water if necessary. The same lighting fixtures in each home adjust according to external light and automatically turn off when no one is in the room.

I love the environment and the new habits we have gradually adopted, like going to the small grocery store in the residence to fill our glass jars with bulk items or taking care of the shared garden with the children on Saturday mornings.

If only all this had been put in place before, long before the storks came to nest all year round on the electric poles, and the snow disappeared completely. We should have developed all these initiatives when the seasons still existed, when birds sang in spring, and spring itself was not just a children's tale.

Wind, rain, and heatwaves follow one another without any distinguishable pattern. Seasons belong to a world that no longer exists. The school provided the children with thermal suits that function

like thermoses to keep them warm when it's cool and cool when it's hot. My summer dresses seem like outdated relics.

In the end, all these changes are only for us; regrets fill our pockets but are foreign to the children, who cannot regret what they have never known. They enjoy the soy-based meals served in the cafeteria, insects, and algae without imagining that we used to eat entirely differently. On Sunday afternoons, the residence organizes workshops for them on themes like upcycling and multifunctionality. They learn to see things through a more respectful prism, appreciating objects and their environment. They go to school, which is located just outside the residence, by bike bus, which provides school transport twice a day. Despite the rising temperatures, regular storms, and repeated droughts, life goes on.

And maybe it's not so bad after all, at least in France. But I can't help but wonder how the situation will evolve and what awaits us tomorrow. France may be carbon neutral, but the planet is not, and every day, our environment crumbles a little more. What world will we leave to our little children? ●

The more we cooperate, the less we sacrifice

This essay tries to imagine how lives of different communities around the world could look like once we achieve zero carbon emissions in 2050, each story illustrates the impact of varied degrees of governmental and corporate interventions. Ultimately this essay aims to underline the importance of cooperation and equality when designing the sustainable future.

It's 2050 and we have achieved zero carbon emissions. How does our life look like right now? Did we have to limit ourselves or did the government have to restrict the companies? Did our lives change for the better or did we put ourselves in the box we can't get out off? Did inequality shorten or grow? Let's for a minute live in the two most radical scenarios...

I am crossing the road in a rush. By habit I look at the traffic light, forgetting they have been long disabled to save energy. At least there are almost no cars after the tax on them got too high.

I keep looking at my old mechanic watch to check the time, 5:58pm, only two minutes left until the city dies down in darkness, no street lighting, no public transport, shops closed — electricity is off until 6am next morning. I rush through the park, cutting the corner by going through grass, all yellow and dry as we are not allowed to water it anymore and rain comes barely ever.

Everything got suddenly dark, that is how I know it is 6pm. I swear in my head, I shouldn't have chatted with that

Author

Yuliia Chorna is a refugee from Kharkiv, Ukraine who recently graduated from the Bachelor of International Business. She is passionate for volunteering, animal rescuing and LGBTQ+ rights. She aspires to work in sustainability management and create her own non-profit organisation.

Program: Bachelor in International Business - 3rd year

client and should have left early instead. I feel so anxious, my stomach hurts. Recently with the price increase, there were more robberies, as people try to get money to eat. There was big support, at first, to shop locally, but once it became a law and prices surged, it was too late to go back.

The only light I see is coming from skyscrapers above our town, if you pay well enough, they keep your electricity for as long as you need, "Vive la France", I ironically say in my head.

I finally get home and shut the door tight. "Mel?" — I shout my wife's name. No answer. I go to our bedroom and find she never got out of bed. I am not surprised; this isn't the first time. Ever since the new laws have been imposed, her depression was eating her alive.

Normally, we try to cook something before the electricity is out, but I came late, and Mel couldn't get up to do it. So, we eat a few fruits, all small, tasteless and about to get rotten, as they were grown locally, with no pesticides, as always to illuminate carbon emissions and save biodiversity. I open a can of fermented cabbage, put some of it on bread and think of all the things I miss from my past life.

We go to bed; I blow out a candle and thus end another day that is no other from the one before.

It is funny, how in order to save the planet, we had to ruin ourselves.

***

I wake up not from the alarm but from sunshine in my face, I know that on my phone I will now see an email announcing today to be a banking holiday. Good weather is so rare in the UK, that companies are now legally obligated to make sunny days a holiday.

I reach into the fridge for some cheese I made a few days ago and go to my garden to pick a few tomatoes. I make myself a cup of mock-coffee, a drink we invented after we realised how much pollution comes from importing real coffee. Before you ask, we did invest in countries who used to produce coffee, so their economies don't crash and now they specialise in cleaner sectors.

I think of taking a train to see my grandparents but decide against it since the train will be full on a banking holiday. Although I am upset, I am also happy more people get a chance to travel with trains being free.

So, I choose to do some chores. I collect fruits in my garden, brew kombucha and go to my neighbour to exchange my fermented cabbage for some of her grain to make bread later.

When in 2020's the energy crisis revealed the fragility of our society, we were forced into advancing our research in renewable energy and this led to us reconsidering our values. We didn't want to live with a sole purpose of increasing profits and slowly we moved to this style of living that we have now. But I have to say, the first time I heard of the idea of degrowth, I was negative about it. I loved my high salary

and travelling wherever possible with cheap airfares. The thought of forcing myself into new uncomfortable life was anything but attractive to me. Now, though, I live a life I always wished for, slow, with no anxiety about not having enough money to pay for basic expenses, with almost no crime or homelessness.

With help of the government via regulations, provision of universal basic income and higher taxes for upper class individuals. With commitment from corporations who complied with green regulations, ensured employee rights were protected and became transparent with their finances, taxes especially. With change of attitude and lifestyle by individuals. We achieved zero carbon emissions by 2050, though it must be said that all of this required a lot of re-education, protests and convincing.

Conclusion

Let's say we live in a panglossian world and there is no doubt we will reach zero carbon emissions. How would you like to get there? Would you rather buy off your freedom, live in a clean world with no consequences for yourself but for all the individuals around you? Or is slowing your life down, giving up some privileges but doing it in a unified way a better choice for you? What if your life didn't change but businesses were forced to improve?

Why do we as people always have to go in one or the other extreme?

We can only reach results by cooperation with governments, people and corporations. We all have to give up something, but more than anything we must give up our short-termism. We must stop thinking of how we, people, will miss out on experiences, how governments will miss out on votes and companies on profits. Reaching our long-term goals, requires for us to occasionally miss out on our short-term wishes.

And the more we cooperate the less we will have to sacrifice ●

Visionnage 2050

I plant, I sow, I water, I cherish, I harvest, I sell, I plow, I prune, and it starts all over again.

This essay aims to shed light on a peaceful future through choices guided by solidarity, portrayed through the life of a market gardener. Behind its utopian facade, this story is firmly grounded in reality, revealing the author's hope and desire for an alternative way of life.

Date: May 12, 2050
Wake-up time: 06:00

The day is going to be beautiful, although a bit warm. I can't wait to taste the first strawberries from the garden. I put on my old overalls, my boots, and off I go for a day of hard work. A routine has been established for the past fifteen years in this little corner of paradise deep in Ardèche where I settled down. I am a market gardener, living to the rhythm of the seasons. My fruit trees and vegetables stretch across two hectares. If someone had told me, when I was in business school, that I would end up as a market gardener, I would have laughed heartily. Life can be quite ironic. I trained in permaculture by reading the Rustica magazines that my mother read over 30 years ago. I discovered and experimented with clever combinations of different non-competing crop varieties that help keep the soil rich and increase yields. I chose a method of «spatial and temporal» vegetable association. For example, I associate climbing beans and tomato plants that provide shade for radishes and carrots. I have also integrated my orchard with my vegetable garden to develop agroforestry in my plots. My large orchard-vegetable garden has become an artistic playground where I try out various combinations. I could

Author

Juliette Samuel : Inspired by innovative approaches related to eco-responsibility, Juliette Samuel specialized in the master's program «Innovation for Sustainability Transition» at Grenoble Ecole de Management. Simultaneously, she is pursuing an apprenticeship as a CSR project manager within the CSR department of CEA Grenoble.

Program: SUP de CO PGE (2021-2024)

list all the benefits of these combinations at length (shade, soil stabilization and drainage, microorganism enrichment…), but time flies, and so far, neither radishes nor strawberries have ever grown in containers.

The strawberries are delicious, and the children will enjoy them! I have about two hours to pick, sort, and then head to the market. I think back to the past when farmers and market gardeners were at their wit's end. They worked tirelessly to earn a pittance. I remember the number of suicides, I remember the giants that left little room for smallholders. Today, we are valued, we contribute to feeding each and every inhabitant, and we are recognized as such. Our products are sold at fair prices, and we are paid according to the sweat of our brows. We live well. Before, I probably would have said I lived «comfortably.» How things have changed. My daily life goes like this: I plant, I sow, I water, I cherish, I harvest, I sell, I plow, I prune, and it starts all over again. From asphalt to the field, that was my destiny and that of so many others before and after me. I live in the heart of nature and actively participate in the activities of my community. Our beautiful village has about a hundred inhabitants, and my job contributes to feeding them all, and I am proud of that.

It's already 11:30 AM! It's always like that when I'm in the heart of my vegetable garden; I don't see time passing. But no more rushing after time, stress, and anxieties. I take the time to live. Anyway, everyone had to slow down. 12:00 PM, I arrive at the village's producers' store where I have a stand. The residents come to pick up their eggs, fruits, and vegetables, all in season, of course. My strawberries have been a hit, what joy to come home with empty crates! The weather is changing, so I take a stroll under my greenhouse. Since the weather can be capricious, I had a greenhouse installed, heated in winter by solar panels and cooled in summer by air conditioning connected to them. The social acceptability of installing solar panels and wind turbines, thanks to green marketing, I must admit, has been a major point of this new society. As for watering, I collect rainwater in a large tank, which is more than enough for my few plants' water needs.

1:00 PM, I clean the almost empty greenhouse in May and take the opportunity to plant my melons, which I will harvest in July. My farm is carbon neutral. Zero CO2 emissions. Funny to say that, as today, all our emissions produced must be offset. If at the end of the week the counter is not at zero, we have two choices: pay a tax based on our surplus or give time to associations in our community. In the countryside, that's how it works; I am often at «zero,» and yet I still reserve two half-days a week to play cards with the elderly or conduct awareness activities in the village school. I offer workshops in my orchard-vegetable garden. These workshops have become mandatory for all young people. For years, I have repeated this mantra: «We protect what we love, and we love what we know,» thanks to Commander

Cousteau. The children are so insightful and curious; providing them with knowledge makes them want to protect and care for this beautiful biodiversity. Their joy fills my reservoir of happiness. This afternoon, I am leading a brand new visualization workshop. For a long time, I didn't want to try it again. For a long time, my unwavering optimism was criticized. At 18, I made a multitude of murals, it was trendy, there was something for everyone: food, climate, needs, new narratives, digital, and so on. I was 18, and at the time, 1/3 of the world's production was lost or wasted, two billion people worldwide were overweight. Food insecurity triggered conflicts, poverty, unemployment, marginalization were the evils of our time. From threats to reality, biodiversity loss, water resource depletion, and climate change made our food system faulty. So many ills, it made me sick. What future in this feverish, downhill world? We talked about ecological awakening, climate emergency, and yet, I had this hope, this spark in the carefree eyes of youth that allows us to hope for everything. The desire to act gripped me. From excess to sobriety, from blindness to lucidity, there was only one step, and I took it. One of my first actions was to become a member of an energy community. What joy to discover passionate citizens with the desire to transmit and, above all, to make a change! These initiatives multiplied throughout the territory, governments took their responsibilities, and drastic measures were put in place in France. They are still what allows us to breathe today.

In short, it's 2:30 PM, and the visualization activity is about to begin. Teenagers, young parents, and retirees have come. What a joy this moment of sharing and union between generations. «Take a deep breath and close your eyes if it helps.» As I facilitate, I think back to this visualization I did, 20 years ago. The subject of it was to project ourselves into a carbon-neutral future in 2050. Needless to say, since then, I firmly believe in the powers of visualization, it seems to have worked.

May 2030, I closed my eyes and imagined successful climate agreements, stabilized global emissions, and a temperature stabilized just below 2 degrees. I closed my eyes and had to go through a typical day. I imagined myself living in the countryside, with a large garden and a variety of fruits and vegetables. I woke up, took a cold shower, dressed in linen clothes, and had fresh fruit from the garden for breakfast on my terrace. I went to work, on foot or by bike, within a maximum of 15 minutes. I imagined working in a human-scale structure, working with my hands or with children. I worked 30 hours a week to have time to take care of my garden and my community life. I ate a homemade meal with my colleagues, prepared the night before.

My favorite activities were a collective contemporary dance and salsa class, a sewing workshop, and creating eco-responsible habitats. If I booked holidays, they would be micro-adventures by bike or on hikes. I had given up the idea of

going further than Europe. I returned home in the evening to water my plants. With my head on the pillow, I thought back to that beautiful day in May 2050, satisfied with my day. Coming back to reality, I opened my eyes; I was still in 2030, having imagined my life in 20 years. An idealized life that seemed so hard to achieve, and yet, so easy to imagine.

It's 4:00 PM, and the participants are also coming back to reality, still a bit in their imagination, some with questioning looks, others with smiles on their faces. The topic was: «Back in 2020: do you regret that time?» The answers are clear: «no.» The young people have tried their best to imagine an unhappy and frenetic world; the young parents have been plunged back into their chaotic and burning childhood. The elderly, filled with nostalgia, have shared what they have lost, but above all, what they have found since.

It's 5:00 PM; I go home, relieved that this first session went well. Back to the garden - well, you now know what I have left to do… Tonight I will water, cherish, and harvest. At 7:30 PM, I will come home to savor the delicious eggplants my partner will have prepared. With my head on the pillow, I fall asleep peacefully. I believe the trick is done; collectively, we have made it ●

2050 - An ideal lifestyle in Switzerland

And now it's Arthur's turn to be interviewed by Marina, who has recently started hosting the «ECO-LIVING» podcast. During these exchanges, Marina asks her guests to describe their lifestyle in 2050 in a carbon-neutral world.

Marina: Hello Arthur. Welcome to the "ECO-LIVING" podcast, thank you for accepting my invitation to join me today to talk about your day-to-day life.

Arthur: Well thank you for inviting me, I am very happy to be here with you today.

Marina: To begin with, would you like to introduce yourself and where you live, what you do?

Arthur: Of course, my name is Arthur Conway. I am a 49-year-old architect living in the suburbs of Geneva, Switzerland. My architecture office is specialized in sustainable architectural design construction and landscaping. I also own a construction company that works in relation with my architecture office. Weprovide solutions for private and public entities to make buildings or houses completely eco-friendly. We believe that sustainable building is an essential step in becoming a carbon-neutral society.

Marina: Can you tell me more about the solutions you offer, what does it entail? Or would you like to give us an example from a previous client maybe?

Author

Victor Bohnet, recently graduated from GEM and now pursuing his master's at Nova SBE, Victor is an aspiring and dedicated student, driving positive change for a better and responsible future.

Program: Bachelor in International Business - Global Management- 3rd year

Arthur: I would say that the best example could be my own situation. About 20 years ago, I did not want to continue living in the centre of town where old buildings were badly insulated and heated with gas and fuel. That was before the government started banning fossil fuel heating and made it mandatory to insulate every home and building. Thankfully for many owners, there was financial help as well as other incentives from the government to not only insulate and change the mode of heating to an ecofriendly option but to go one step further a change it to the best option possible based on local energy choices. I think that we can sort of thank the energy crisis of the early 2020s. Back then I was only 22 or 23 but I remember vividly that it was a steppingstone for a lot of governments, because they did not want to be reliant on fossil fuel anymore. I think that the crisis really helped them or could we say forced them, to initiate large scale projects and allocate funding to reduce and ultimately eliminate the use of fossil fuels. It took some time, that I cannot deny. But as we see now, we manage to live without it and at least I believe that our lives are better now than ever. Sorry if I am getting off the topic.

Marina: No worries, this is also the goal of the podcast. It is a place for people to express their opinions on anything and everything related to sustainability. But carry on with your example, please.

Arthur: Yes of course. So about 20 years ago, I bought a medium sized farmhouse in the sort of suburbs of Geneva and I invested what at the time I thought was an enormous amount of money to make sure that it was perfectly insulated so that it could be energy efficient and had enough energy sources to be self-sufficient. By the way that initial investment seems like nothing in comparison to the economies I have been able to make over the years. Although the house is still connected to the grid, it is only to make sure that the surplus electricity my house produces goes into the grid and is stored by the governmental electricity company. I heard they had found many ways of storing electricity thanks to some new battery designs and other technological advancement.

Marina: How is electricity produced at your house?

Arthur: We have photovoltaic panels on the roof and thankfully the largest side of the roof is oriented south so that turned out to be very practical. These panels convert thermal energy into electricity. We also have a geothermal heat pump that provides us with heating in the winter without any emissions and cooling in summer, but nowadays most new buildings have them if it is geothermically possible.

I really wanted my house to be self-sufficient and sustainable on multiple levels which is why my family and I do not live alone in the house. I divided the house into four apartments, and we live in one of them while I rent out the three others. I think it is an extremely positive

living situation because it provides an opportunity to help each other on different aspects of our life. Markus, one of my tenants, is a retired farmer and he likes to grow vegetables all around the garden. He absolutely loves to produce local species of seasonal fruits and vegetables all year long. He uses different methods, such as fallow and regenerative farming to promote biodiversity and avoid carbon dioxide from escaping from the earth. The things we can learn when we listen to him, its miraculous! Markus pays most of his rent with the fruit and vegetables he produces and by "babysitting" my kids from time to time.

I believe that if we are fortunate enough to be able to help others, we should. That is also why I wanted to make several apartments within the farmhouse, so that I could help other people find a good home too. The two other tenants are both couples with children while one of the couples earns quite a lot, the other one does not which is why the rent is specific to every income and situation. Typically, Markus pays very little rent because he helps us by taking care of the garden and produces food for the entire house while the low-income family pays less because they deserve similar living standards to everyone else.

Another aspect that my wife and I really like with this living arrangement is that we tend to share a lot of our appliances. For example, rather than all four apartments having a vacuum cleaner each, we share one, it saves us all some money and helps to reduce our impact on the environment. We basically do the same thing for a lot of other electric appliances. We have a cupboard on the shared landing where we store them. I really wanted this house to feel like more of a community rather than a simple place where people come to sleep.

Marina: How about transport? Do you have an EV?

Arthur: My wife and I do not have one, but one of our tenants does so sometimes they will be the ones dropping the kids off at school. Otherwise, I travel by bike or public transport. I am very grateful that the public transport in Geneva is not only reliable but that it will take you basically anywhere you want around the canton. My wife on the other hand has an electric scooter. As she is a nurse, it is easier for her to go and come back from work late at night or early in the morning when public transport is less frequent. When we go on vacation, we basically only take the train through Europe. The kids love it because there are always other kids they can play with on the train, and we really like it because we can simply enjoy the beautiful landscape, we see out the window, read and relax. Every few years we take the children outside of Europe, we do not do it every year because plane tickets have gotten expensive now that the planes only use hydrogen. We also don't go skiing anymore, since about 15 years ago most ski slopes were closed down because they were consuming too much water. Our planet could not afford it anymore.

Marina: Very interesting Arthur! As we all know flights are not the only consumer good that has become more expensive. Can you tell us more about that and how you deal with that?

Arthur: Sure! We did not feel a huge difference when the government implemented the new taxes on highly unsustainable goods, since my wife and I have mostly always been vegetarians. There are so many substitutes anyways we have never really looked back, and I am pretty sure my kids would say the same. The items that maybe made a difference were clothes but then again, we do not have to buy clothes every day either. It was just hard when our first child was growing up, we would have to get new clothes all the time. That is why my wife and I both found groups of parents online that exchange their children's clothes and toys. Basically, anything you want really, that is maybe one of the websites we use the most, it is just so practical and easy to use. Rather than buying anything new, we just look it up and about 98 percent of the time, someone will have an extra or will be selling theirs online.

Marina: What do your children think about all of this?

Arthur: Of course, as teenagers they can be unhappy and difficult at times. I am just kidding, ever since they were very young, we have been teaching them about the past and how the state of our planet was heading in the wrong direction. At school they learn about sustainability and how to live on earth without impacting and destroying not only nature but also biodiversity. I think their generation has been well educated on this subject and they are conscious of the fragility of the living environment. They are able to explain circular economies, degrowth and other concepts even better than I can. It is truly remarkable how smart children are when you teach them about all of this.

Marina: What do you think is the most significant change that your local government implemented in the last 20 to 30 years?

Arthur: Well, there are many things. We already talked about a few; taxes on unsustainable goods and services, improving insulation and many other initiatives. But as an architect, the one thing I am most proud of is the drastic reduction of urban heat islands. They have always been in my mind, one of the things that should have never existed in the first place. Having cities with barely any vegetation is not normal which is why temperatures got much hotter in city centres. I was pleased when a lot of large cities around the world realised and started changing this and implementing green roofs, massive tree planting schemes and other techniques to reduce these concrete hubs. These solutions made a great impact, it made cities fresher, less polluted and overall more comfortable, therefore more enjoyable to live in.

Marina: A last question I like to ask anyone that comes on the podcast is do they miss anything from the past?

Arthur: That is a good question. I think maybe the only thing I miss really is going abroad for sporting events but even now I still find ways to enjoy sports. It was a good initiative from FIFA and other sport associations to restructure major sporting events so that they could reduce environmental impact. Forexample, by using or renovating existing stadiums rather than constructing 4 to 7 new stadiums for every World Cup and it made the competition longer which I appreciate. It is good that they took action to reduce their carbon footprint. I slightly miss going to the actual event though but if I can go by train, I sometimes try to attend one or two matches. When it is far away, I just watch it in the pub or with my kids on live television. They really like football too.

Marina: Thank you so much, Arthur. It was a pleasure having you on the ECO-LIVING podcast.

Arthur: Thank you for having me ●

IMPACT

août 2023 • Design : Grenoble Ecole de Management • Crédits photos : Getty Images, Bruni Fournier et DR

GRENOBLE ECOLE DE MANAGEMENT
BUSINESS LAB FOR SOCIETY
une école CCI GRENOBLE

12, rue Pierre Sémard
38 000 Grenoble - France
+33 4 76 70 60 60
info@grenoble-em.com
96, rue Didot
75 014 Paris – France

grenoble-em.com

ASSOCIATION AMBA ACCREDITED · AACSB ACCREDITED · EQUIS ACCREDITED

MEMBRE FONDATEUR GIANT INNOVATION CAMPUS