
OFF
THE FENCE
THE FUTURE FROM ABOVE
4 X 60'
A DRONE "TIME MACHINE" LOOKING DOWN ON THE EARTH IN 2050
THE DEFINING YEAR OF OUR PLANET'S FUTURE
FROM THE SKIES ABOVE TO SEE THE WORLD IN A WHOLE NEW WAY.

INTRO

This series takes us on a journey of discovery to find out how the world could look in 2050 - the defining year for our planet's future - where "the climate fight" remains the consuming battle of our age, but its most intense phase is in our rear-view mirror. Just!

It's a future that is - in technological terms - easily within our reach, driven by revolutionary thinking and the unique ability to reshape our world… transforming every aspect of our lives; from how we **HARNESS ENERGY**, **TRAVEL**, **EAT & RECYCLE OUR WASTE** to **HOW WE LIVE**…

Across the series we travel forward in time, 30 years from now **where the global population has reached 9.7 billion**, and bring to life a world where environmental challenges are successfully being overcome thanks to a multitude of revolutionary technologies. This is the very cutting edge of global science and it's going to be a thrilling ride!

We explore the technologies behind **3D printed neighbourhoods, AI driven nature conservation, Elon Musk's Hyperloop, volcano power stations,** and **agri-robots who mass-produce sustainable food,** and much more...

The series is driven by a **distinctive visual camera aerial perspective** that gives us a dynamic and all-embracing point of view to encapsulate the idea of our planet as 'home'. And the future is "brought to life" using **interviews** combined with **drone-captured footage, CGI, archive, dramatic reconstruction and location filming** with **access to cutting-edge scientific, projects, institutions and experts around the world,** such as...

Physicist **Max Tegmark** of MIT; **Christiana Figueres**, leading expert on climate change; **Jane Macfarlane**, Director of the Smart Cities Research Center; and environmental engineer **Rune Westergard**.

"The Future From Above" changes the narrative about "Climate Armageddon". Our focus is the future as it could look, as science inspires and drives our technological progress. This is a story about inspiration and possibility.

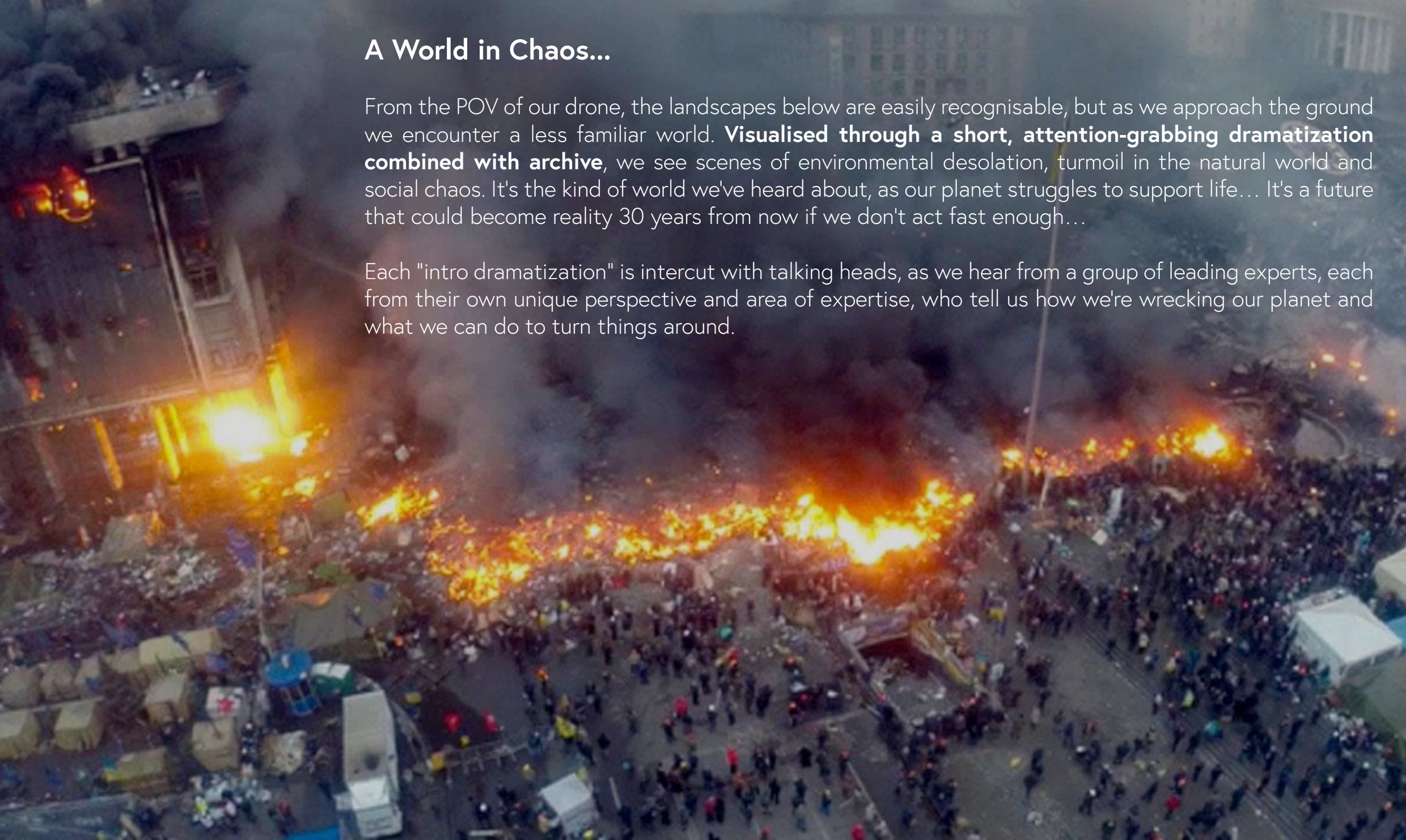
THE SERIES

SERIES OVERVIEW

Drawing on the latest innovations now used to forecast advances in science and technologies, we take viewers on an epic journey into the future – **to 2050, a year that is not that not that far away in terms of climate timescales**. We visit countries around the world that are overcoming tough environmental challenges through innovative new technologies.

Using CGI, interviews, archive and specially shot sequences, we discover how these technologies are transforming the way we **harness energy, travel, eat & recycle our waste and live** – reducing human impact on the planet.

Each episode can be watched as a stand-alone story and each opens with the POV of our drone looking down at Earth from above, followed by a short "intro dramatization" depicting a dystopian future scenario...



A World in Chaos...

From the POV of our drone, the landscapes below are easily recognisable, but as we approach the ground we encounter a less familiar world. **Visualised through a short, attention-grabbing dramatization combined with archive**, we see scenes of environmental desolation, turmoil in the natural world and social chaos. It's the kind of world we've heard about, as our planet struggles to support life… It's a future that could become reality 30 years from now if we don't act fast enough…

Each "intro dramatization" is intercut with talking heads, as we hear from a group of leading experts, each from their own unique perspective and area of expertise, who tell us how we're wrecking our planet and what we can do to turn things around.

An Alternate Future

We then cut back to the POV of our drone looking down at Earth from above. We've "reset" the clock and we're now looking at a world 30 years from now where, in just a few short decades, humanity has reshaped its destiny and aspired to new ways of living, and technology is playing its part in a sustainable, contented world. **This new, sustainable future is the focus of each episode.**

As we descend and we begin to see the detail around us, viewers are given a fascinating low tracking, drone's eye view of a reimagined landscape now brought to life using a mix of specially shot footage, archive and stunning CGI, which reveals how pioneering technologies and geo-political relationships have reshaped our world, helping to massively reduce the impact of climate change on our planet.

As we explore this version of a 'brave new world' we hear from the people who have the knowledge and insight to make it a reality…

EXTRA ELEMENTS...

During our journey into the future, we use CGI and archive to show how it was too late to avoid some catastrophes. For example: China's on "red alert" due to the polluted air's quality, even though they stopped burning fossil fuels. Sea level rises, due to a now inevitable rise in global temperature, have caused coastal flooding, changing the look of cities like Miami and Shanghai. And desertification has claimed cities from North Africa to Russia, with temperatures hitting 60 degrees Celsius.

At the end of each episode, we look even further into the future to take a tantalizing glimpse of the potential super-advanced technologies of 2100... such as biogenetically designed nutrition grown on the Moon, commercial space flights, brain-to-brain telepathy, thermal radiation is being harnessed for energy (capturing energy from the night's sky), Waterworld-style "plant factories", environmentally-friendly, underwater metropolis that uses the available ocean resources to run, and energy harvested from human motion.

WHY NOW?

Humanity faces an existential crisis due to its broken relationship with nature.

We need to shift away from the last century's fossil fuel, carbon-based economy and address the emissions that come from changes in land use and deforestation.

We need to transform agricultural practices so that we can feed the world, without it costing the Earth.

We need to protect biodiversity and reduce species' mass extinctions.

To survive, we need to re-imagine our relationships with NATURE, with our CITIES, with EACH OTHER. FAST!

It will take government and collective action.

It will take the media to play a creative role, sparking our collective imagination about how things can be different – making "community building" and not "consumption" the new universal aspiration.

And, it will take science and technology to help us drive the transformation.

A TECHNOLOGY LEAP…

A lot can happen in 30 years. Life today looks very different from how it was in 1990. Back then, cheap short-haul flights were rare, and the smartphone was still nearly two decades away; there were only four TV channels, and Google, Amazon and Facebook didn't exist.

Today, humanity has more scientific insight, ingenuity, and technology know-how than ever before – **changing our planet's destiny is within our grasp.**

For example, by 2050 we could have:

- Halved our emissions every decade – resulting in the air being cleaner than it has been since before the Industrial revolution.
- Built a network of sustainable smart cities – revolutionising everything about the way we live, travel, eat, work, learn, stay healthy, and even hydrate.
- A new, globally-connected green energy supply – powered by solar panels in the Sahara Desert, geothermal heat from volcanoes in Yellowstone, Iceland and Japan, artificial wind islands in the North Sea, and ocean tides in Canada.

EXAMPLE OUTLINES IN BRIEF

Ep 1 [renewable energy] **A World Powered By Nature**
radical tech and ingenious solutions to harnessing new sources of renewable energy – enough to power every human activity 24/7, 365 days a year.

Ep 2 [transportation] **Dawn of the Electric Journey**
a new, global battery-powered electric transport system moving cargo and people around the world and beyond – from automated hauliers to flying taxis to hyperloop vacuum tunnels and even space travel…

Ep 3 [food & recycling] **Feeding the 9 Billion & Naturing the Planet**
inventive, high-tech and sustainable approaches to agriculture to produce enough food to feed 9.9 billion people, and a new circular economy where waste transforms into energy and tomorrow's infrastructure is built from yesterday's food packaging thanks to cutting-edge technological approaches.

Ep 4 [rapid urbanisation] **Digital Megacities**
revolutionary tech changing the way we live, work, communicate, relax and even breathe in urban environments – made possible by a new, global digital network connecting all four-corners of the world.

EPISODE EXAMPLES

EPISODE ONE: POWERED BY NATURE
[renewable energy]

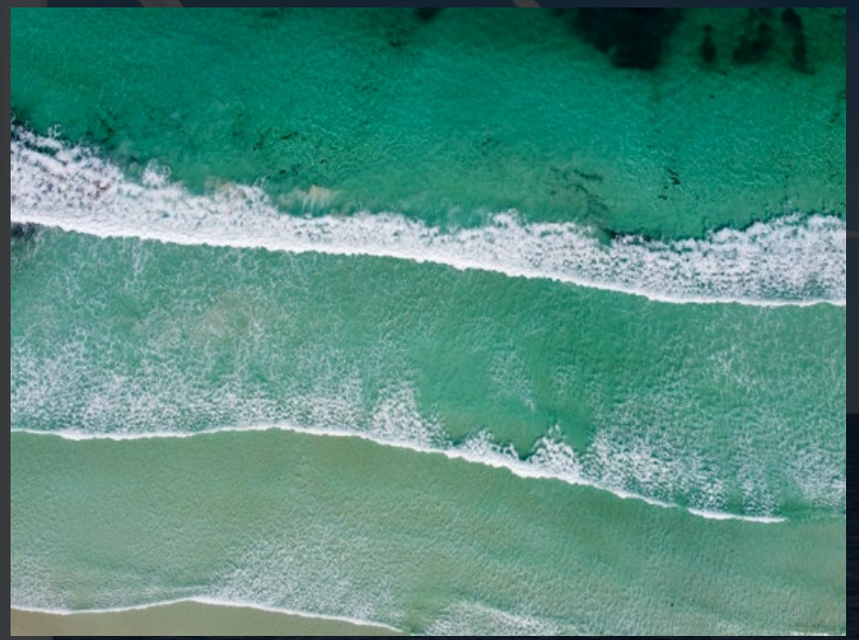
Intro dramatization - ENERGY ARMAGEDDON: It's 2050, we're using fossil fuels at an incredible rate, but they're running out - FAST. Long queues are forming at petrol stations, public transport is barely running, garbage is piled high in the streets, electricity in our buildings and on our streets is prone to frequent blackouts. People in polar countries are dying from insufficient energy to heat their homes and sea levels are rising - New York is underwater along with every other coastal city across the world.

The clock is "reset" and we take a look at the same future, but one where new technology has allowed us to harness new sources of renewable energy.

For millennia we've been gathering and burning wood, peat, coal, and most recently oil and natural gas, getting more and more inventive about how to extract the stuff, with offshore oil rigs and fracking.

But all the time, a more sustainable answer was everywhere, all around us - endless amounts of kinetic energy, which we barely use: **sun, wind, rain, tides and geothermal.**

All the while we've been digging deep for coal, we've barely scratched the surface of renewable energy. The challenge is mostly in our heads. With a nation-based view, it's not always windy in the same place, and the sun doesn't shine 24 hours.



Change your mindset and it's easy to see what's needed, **a globally connected renewable energy supply,** because the sun is always shining somewhere and the wind is always blowing.

We discover a shared, global energy network that has plenty of renewable energy 24-hours a day, 365 days a year to power every human activity.

Travelling to the **Sahara Desert, now covered in solar panels**, we find out how the energy of the sun is moved around the world to wetter climes, such as Britain - transferring power and wealth from oil rich states to sun-drenched impoverished countries, rebalancing global inequalities and solving fundamental problems.

We drop down into Denmark to explore how an **artificial wind island**, the size of 18 football pitches, is helping windless continentals, and we journey to **volcano-ravaged islands** rich in **geothermal energy** to discover how they're saving those stuck at home in cloudy suburbia.

We then travel to a small island in the North Sea where we see **thousands of wind turbines, serviced by state-of-the-art drones**, before moving onto Canada where **highly predictable tidal movements are being harvested.**

This new global energy network generates tons of electricity without toxic pollution or global warming emissions, and it's a game changer for the transportation industry...

EPISODE TWO:
DAWN OF THE ELECTRIC JOURNEY
[transportation]

Intro dramatization – KILLER TRANSPORT: It's 2050, we've been too slow to harness energy generated from natural resources to power batteries for a global "Electric Transport System". Transport, one of the biggest sources of greenhouse gases, is killing our planet. Air pollution is out of control, traffic fumes in Delhi are so bad the city is called "the gas chamber" and life expectancy is 7 years shorter. Nature's answer – Coral Reefs – which generate half of Earth's oxygen and absorb nearly one-third of the carbon dioxide produced from burning fossil fuels… have all but disappeared.

The clock is "reset" and we take a look at the same future, but to a world that is harvesting renewable energy every day, enabling the world's first global "Battery-powered Electric Transport System".

Renewable energy is providing the horsepower needed for new **battery powered electric transport systems**, which are everywhere – under the ground, in the air and under the sea. We discover how they're moving cargo and people around the planet – including **solar freight planes, automated haulage trucks, cars, buses, high hyperloop vacuum tunnels, flying taxis, and even space travel…**

We travel to Hong Kong – home to the world's busiest cargo airport – to find out how **battery powered freight planes**, built with large solar wings, have revolutionized how goods are moved around the planet.

Dropping down into Los Angeles, we ride "shot-gun" on a Magnetic levitation (maglev) train, running in **hyperloop vacuum tunnels** connecting passengers on the ground at high speed between cities.

In the skies above LA we see **armies of delivery drones**, and higher still **"city copters"** and **"heli taxis"** transporting passengers around the city.

Travelling to Masdar City in Abu Dhabi we journey underground to discover **a driverless, autonomous, emission free transit network** – with electric vehicles gliding around on magnetically guided routes beneath the fossil-fuel-free city.

The same renewable energy sources that are powering our electric transport system are also supplying the power needed to feed the world and recycle our waste.

EPISODE THREE: FEEDING THE 9 BILLION & NATURING THE PLANET
[food production & recycling]

Intro dramatization – WORLD FOOD CRISIS & PLASTIC OVERLOAD: It's 2050 and the world's population has hit 9.7 billion. Rainforests have been stripped bare as demand for food has increased by 70% and food famine is escalating across the globe. Modern society relies upon complex, modern supply chains for food, but it has collapsed. There are long queues at supermarkets, but many shelves are empty.

Global waste has also increased by 70%, with 3.40 billion tonnes of plastic packaging being dumped each year. Our marine ecosystems are in a perilous state, very soon ocean plastic will outweigh all the fish. Landfill space is fast running out. Humanity has reached its peak of one-way consumption.

We reset the clock to take a look into the same future, but to a world where technology has led to myriad ways of sustainable and inventive approaches to food production and recycling.

For decades, intensive agriculture has been driving global deforestation and the loss of wildlife habitat, damaging soil and water. Nothing compares to beef, lamb, pork, and dairy – they're in a league of their own, outliers in environmental destruction. Deforestation for cattle ranching, cow burps and farts, and fertilisers produce more greenhouse gases than all the world's cars, lorries and planes combined.

Many of us have become accustomed to eating food sourced from all over the planet, during any season. But the environmental crises, the crisis of factory farming, the dwindling of fishing stocks, and the demands of urban population growth, demands a radical overhaul in our approach to food.

We travel to the Netherlands and to explore **towering, indoor vertical farming**. We explore a farm that is producing the same amount of food as a 3-acre farm annually, just from 340 square feet – achieved by **using artificial intelligence** and overseen by **state-of-the-art drones**.

In Cornwall in England, we discover **robots mass producing the future of food** in AI-powered insect farms. Insects are the sustainable livestock option now as they emit far less greenhouse gases than cattle or pigs. We also see teams of **robots processing algae** – the silver bullet of sustainable food.

Rich in nutrients, such as protein and minerals, algae doesn't need arable land or water to flourish, and is now a major part of the global food chain.

Dropping down into Saudi Arabia we find out that the **desalination industry is booming**! Plants, powered by solar energy, turning seawater into drinking water, are **overseen by swarming tiny robots**.

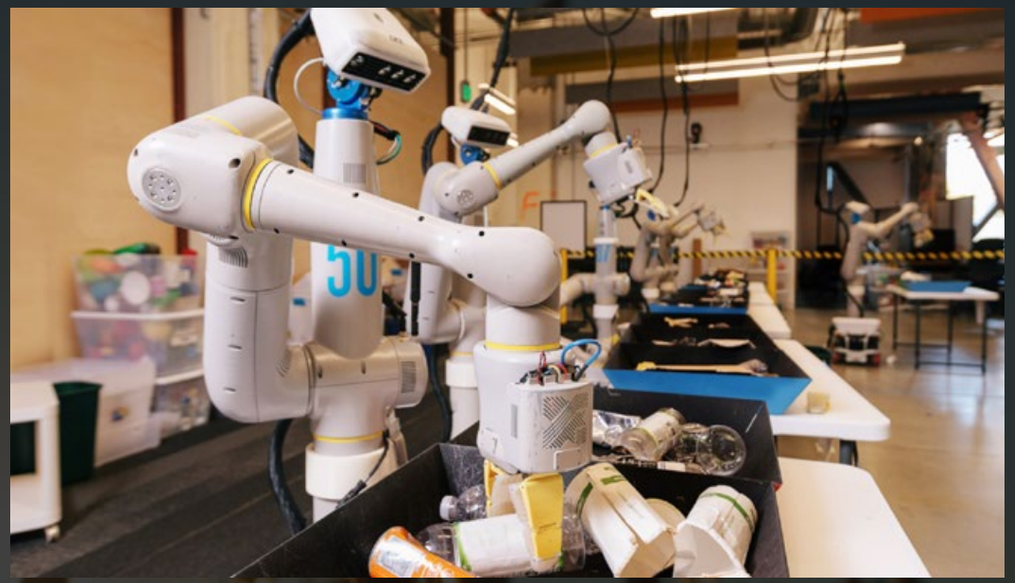
The way we deal with plastic packaging and organic waste has also been transformed – in 2050 a new circular economy is making zero waste a reality, by using revolutionary tech.

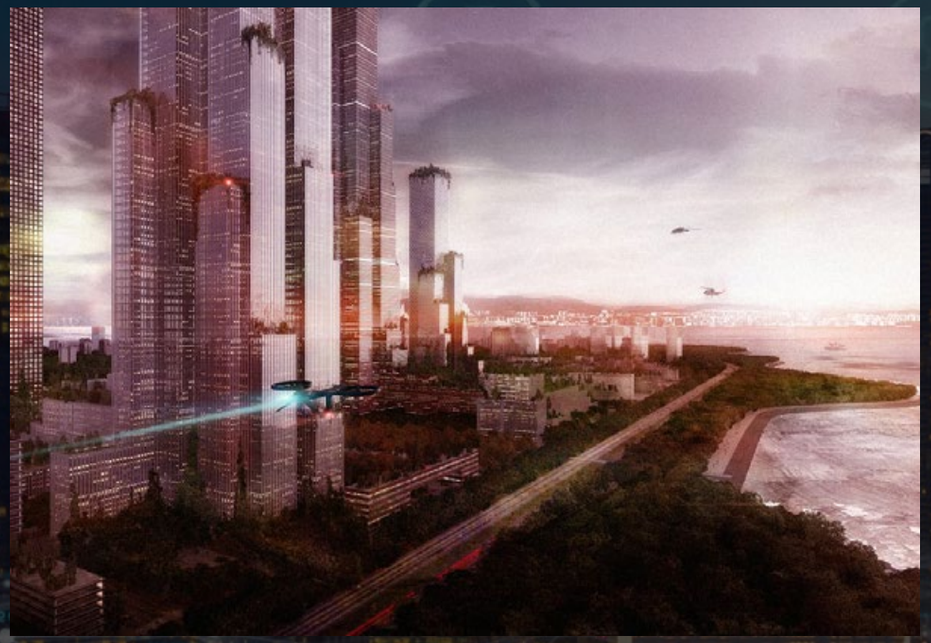
We journey to Nairobi to an area known as "The Jungle". This was once home to the largest slum in Africa – but now **AI robot recyclers are transforming waste into building materials and teams of construction robots** are busy building **new sustainable, zero waste settlements** – with perfectly flat and bouncy roads made from plastic waste. In the centre of the city we see **autonomous, electric garbage trucks** making their collections and drones picking up people's recyclables.

Dropping down into Mexico City, we explore the **"Green Loop System"** that has transformed the city's huge waste problem. Rather than transporting organic waste to processing facilities or landfills, many miles away, the system handles it within the city limits.

Offshore hubs accept material via truck or barge, process it inside and use the compost to create green spaces and community farms on their rooftops. And human waste is also being recycled by revolutionary new toilets, which is then used as fertilizer for people's flower and vegetable gardens.

Renewable energy isn't just powering the way we feed the planet and recycle our waste – it's changing how we live in cities… together with the help of a new super-connected digital infrastructure.





EPISODE FOUR: DIGITAL MEGACITIES
[rapid urbanisation]

Intro dramatization – THE SPRAWLING PLANET: It's 2050 and more than 70% of the world's population are now living in urban areas. Megacities are increasingly common, as are global pandemics. Out-dated urban infrastructures are pushed to the brink. Billions of people lack access to a toilet, and are living in slums. Economic and environmental migration is overwhelming developed nations.

The world has also failed to invest in a shared digital infrastructure... We're stuck using communication networks that were built with eighties hardware, and, although they're super reliable, they're hard to change. Now these ossified networks are stalling our progress and causing environmental disasters; air pollution is suffocating cities, catastrophic flooding is wrecking people's lives and livelihoods, pandemics are deadlier and more frequent.

The clock is "reset" and we take a look at the same future, but in a world where cities have become "communities" and urban spaces have been redesigned – all driven by new technologies renewable energy and new technologies that are supported by a new digital network that has created a super-connected planet.

Behaviour change has played a big role in tackling the impacts of climate change – culture creation, inspired by the arts, including playwrights, tv series, advertisers and marketers, have made **"community building" and "not consumption" the new universal aspiration.**

We journey to Saudi Arabia where we discover 3D printed **"Twenty-minute Neighbourhoods"** in urban areas and in deserts, that have the capability for 1 million people to live together in a green environment – covered with trees – with every daily need at their front door; work, home, fitness, healthcare, shopping and entertainment – all within a 20-minute walk or bike ride.

These are landscapes that have cars and no streets - with public transport, freight and municipal services all placed underground, including zero-carbon, high-speed autonomous transport. And vertical gardens are growing on every building.

In Tokyo, Japan we explore other new forms of community living where **elderly and child care** is provided by **robotic smart technology** combined with haptic "real skin" human touch. And dropping down to Australia, where temperatures have sky- rocketed to 60 degrees Celsius, making it impossible for people to be outside for more than 6 hours a day, we see vast underground suburbs supported by cooling and oxygenating technology.

We then travel to a **floating city** off the coast of New York, which consists of buoyant islands clustered together in groups of six to form villages. These clusters are repeated in multiples of six to form a 12-hectare village for 1,650 residents, and then again to form an archipelago home to 10,000 citizens. This off-shore environment provides a sustainable habitat for residents who've been evacuated due to rises in sea levels, with **blue technologies** that meet humanity's shelter, energy, water and food needs without killing marine ecosystems.

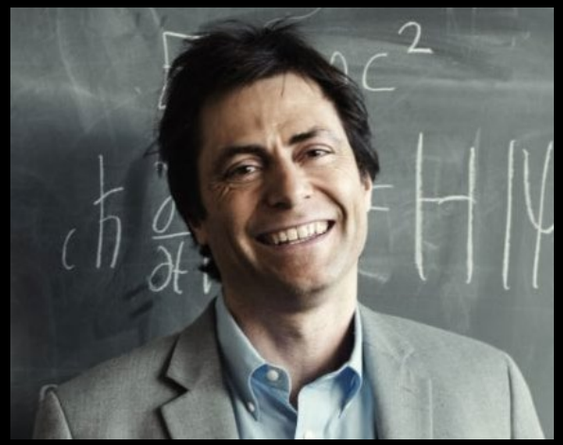
All this amazing new technology has changed the way we live our lives but it wouldn't be possible without a super-connected, advanced digital infrastructure...

Above the earth are a network of satellites providing connectivity: everywhere. Then, under the ground, under the sea, fibre optic cables connect cities, towns, villages, offices and houses, everywhere. Millions of small cells, each the size of a shoe box, line our streets, densifying mobile networks, everywhere.

We explore how this **advanced digital network** detects and responds to myriad types of input from the physical environment, which are linked to software that makes decisions and changes 'things' in the real world... For example, in Germany a computer measures river levels, marries this with weather forecasts, and if the sums add up, it raises various flood defences before villages get flooded – preventing villages and towns from getting flooded – every year.

We travel to Singapore - the world's first "Smart Nation" - where we see **Traffic Management Systems** responding to air pollution, controlling the traffic until the air quality gets better, **buildings' heating and cooling** adjust to the weather, **cars re- routing themselves** according the traffic to find an vacant car parking space, **drones** who know where to leave our parcels, **robots working together in teams** to build complex structures using dynamic new materials, and even **our own bodies connecting to the pharmacy**, as it concocts customised drugs, re-configured each month according to our personal stats.

EXAMPLE EXPERTS



MAX TEGMARK

Max Tegmark is an MIT physics professor, known as "Mad Max" for his unorthodox ideas, wide interests and passion for adventure. He is the co-founder of the Future of Life Institute, is the author of *Life 3.0: Being Human in the Age of Artificial Intelligence,* and has featured in dozens of science documentaries.

CHRISTIANA FIGUERES

Christiana Figueres is a leading figure in the fight against global climate change. She directed numerous UN conferences, including the historic Paris Agreement. She co-authored *The Future We Choose,* is on the board of Impossible Foods, and was listed by TIME magazine as one of the top 100 influential leaders of the world.

RUNE WESTERGARD

Rune Westergard is an entrepeneur, author and technological optimist. He has been involved in developing several pioneering environmental solutions and is a director at the engineering firm Citec Group, as well as the author of *One Planet Is Enough*, which is about solutions that will end global warming.

BILL GATES

Bill Gates was one of the founders of Microsoft, who went on to become one of the world's richest people. After stepping down as Microsoft CEO he has focused on his charitable foundation, and is now investing heavily into startups which have radical solutions to environmental problems.

EXAMPLE EXPERTS

JANE MACFARLANE

Jane Macfarlane is director of the UC Berkeley Smart Cities Research Center, which uses data analytics to improve urban transportation systems. She has over 30 years experience in high performance computing, directing research at companies such as General Motors. She holds 8 patents and a PhD in Mechnical Engineering.

KAISA KOSONEN

Kaisa Kosonen is a climate and energy policy advisor at Greenpeace International who is based in Helsinki, Finland. She spent several years working as an energy campaigner after studying Environmental Sciences. She was an observer during the IPCC negotiations and regular commentator on numerous media platforms.

AYANA JOHNSON

Ayana Johnson is a marine biologist and expert on climate change solutions. She founded Urban Ocean Lab, a think tank for ocean conservation policy in coastal cities and has a podcast called How to Save a Planet. She previously worked at NOAA and her PhD research focused on coral reef management.

AUSTIN BROWN

Austin Brown spent several years in Washington DC at the Dept of Energy, National Renewable Energy Lab and in the Obama administration's Office of Science and Technology. He is an expert in clean energy who is now director of US Davis' Energy, Environment and Economy Policy Institute.

OFF THE FENCE

ACADEMY AWARD

BAFTA

EMMY

ROYAL TELEVISION

GREEN SCREEN

GOLD PANDA

JACKSON HOLE

Off the Fence Productions is an award-winning producer of factual television and theatrical documentaries.

We have created more than 500 hours of television content for a wide range of international broadcasters including History Channel, MTV, BBC, Channel 4, Discovery, MSNBC, PBS, Netflix, National Geographic, A&E, Smithsonian Channel, The Weather Channel, ZDF, Arte, and France Televisions.

The creative team have been recognised by more than 80 awards, including Royal Television Society, Emmy, Golden Panda and Grand Teton.

Our Netflix film 'My Octopus Teacher' recently won an Academy Award and a BAFTA for Best Documentary.