

# REFLEXIONS

## REGULATION STRATEGIES FOR EFFECTIVE CLIMATE CHANGE MITIGATION

Climate change regulations: understanding, analyzing,  
and debating for action on the occasion of the international conference  
REFLEXIONS organized by Institut Polytechnique de Paris on June 9, 2023



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**Eric Labaye,**  
Chairman & President  
of École Polytechnique  
and Institut Polytechnique de Paris

The world as we know it is being transformed by the profound shifts in climate patterns, reshaping the environment and our very way of life. Acknowledging the gravity of climate change and its far-reaching implications, we have a shared responsibility to act swiftly and collectively.

The REFLEXIONS conference, spearheaded by Institut Polytechnique de Paris (IP Paris) is an academic and scientific platform fostering solutions for a sustainable transition.

### **Regulation: A Fundamental Pillar in Combating Climate Change**

The second international REFLEXIONS Conference seeks to unravel the multifaceted layers of climate regulation. Regulations, be they crafted by governments, international treaties, or regulatory agencies, hold the power to shape our response to climate change. Informed by scientific expertise, these regulations stand as a cornerstone for action. Our goal is to explore how regulations can transcend being mere options and evolve into binding mechanisms, compelling both national and global commitment to sustainable practices. Collaboration between public and private sectors, as well as civil society, becomes crucial in shaping the regulations that will drive transformative change.

Climate change is not just an abstract concept but a palpable threat to our planet's equilibrium. It is a challenge that requires unified efforts from all corners of society. However, it is in the hallowed halls of

higher education and the laboratories of research institutions that the seeds of understanding, action, and transformation are sown. Since the dawn of the 1970s, when scientists first raised the alarm about rising temperatures, higher education and research institutions have stood at the vanguard of the battle against global warming. These institutions have not only sounded the clarion call about the imminent threats but have also lent credence to the reality of climate change. Their contributions have fostered understanding, driving commitments that culminated in landmark agreements like the Paris Agreement of 2015.

### Education and Research: Agents of Change

The significance of education in addressing climate change cannot be overstated. At its core, education not only imparts scientific knowledge but also fosters a holistic comprehension of the societal, economic, and environmental ramifications of climate change. Institut Polytechnique de Paris, through its commitment to infuse sustainable development principles across disciplines, exemplifies how education can be the bedrock upon which a conscientious generation of change-makers is built.

Our research endeavors span a spectrum of disciplines, championing an interdisciplinary approach that is deeply embedded in our institution's DNA. Institut Polytechnique de Paris stands as a testament to this ethos, housing a network of 32 cutting-edge laboratories

and 1,400 researchers. The launch of the Energy4Climate center in partnership with École des Ponts ParisTech serves as a testament to our commitment to transformative research, spanning natural sciences, economics, humanities, and engineering.

### Innovation for Sustainable Solutions

The spirit of innovation thrives in environments where knowledge converges with creativity. At the heart of Institut Polytechnique de Paris is an innovation center that propels the creation of greentech startups—a living embodiment of the institution's commitment to translating research into practical solutions. These startups, spanning energy efficiency tools to breakthrough battery materials, embody the confluence of research excellence and entrepreneurial spirit, igniting a dynamic that promises tangible change.

As we delve into the proceedings of the 2023 REFLEXIONS Conference, the imperative to understand, regulate, and mitigate climate change comes into focus. This paper serves as a testimony to the profound insights that were shared, outlining the intricate relationship between climate regulation, education, and scientific exploration. It emphasizes the imperative need to unite, to harness the power of knowledge, and to catalyze change that extends beyond our classrooms and laboratories to shape a more sustainable future for generations to come.

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Know more about Energy4Climate Interdisciplinary Center by Institut Polytechnique de Paris

—> [Click here](#)

Watch the replay of the conference :

—> [Click here](#)





Regulation to fight climate change is a key topic. IPCC's experts stressed out the fact that we are in a race against time to fight climate change and its consequences.

France aims to become the first major country to phase out fossil fuels. Firstly, with policies promoting energy sufficiency and efficiency; and regarding sufficiency we are now heading in Europe with what is seen as the most advanced policy. Secondly by increasing decarbonized energy production through renewable sources and nuclear power. Thanks to these levers, France managed to reduce by 2,7% our CO2 emissions last year.

On an international level, France has adopted the ambitious "Fit for 55" climate package, that will enable the European Union to reduce 55% of its emissions by 2030 and reach climate neutrality by 2050. Furthermore, in the perspective of this year's COP 28, we must maintain the 1.5°C target, emphasizing the abandonment of fossil fuels. We are working on it with our international partners, especially producing countries, to build ambitious commitments. This is a tough target, and we must also give every country the means to achieve a fair transition and therefore we also need a funding big-bang. That is why France hosted a summit for a New Global Financial Pact, to help developing countries invest in their energy transition.

**Agnès Pannier-Runacher,**  
Minister of Energy Transition, France

# I. EMPOWERING SCIENCE-BASED REGULATION: ADVANCING SUSTAINABLE ENERGY DEVELOPMENT



## SESSION 1

**Keynote: Teresa Ribera**, *Third Vice-President of the Government of Spain and Minister for Ecological Transition and Demographic Challenge*

**Valérie Masson-Delmotte**, *Co-Chair, Working Group I of IPCC, CEA Senior Scientist at LSCE of the Institute Pierre Simon Laplace for Climate Sciences*

**Philippe Drobinski**, *Director of the Energy4Climate Center, IP Paris*

**Laurence Tubiana**, *CEO of the European Climate Foundation*

**Estelle Brachlianoff**, *CEO of Veolia*



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## TERESA RIBERA

*Third Vice-President of the Government of Spain and Minister for Ecological Transition and Demographic Challenge*

As Spain assumes the Presidency of the Council of the European Union, the focus is on transforming energy systems, especially when Europe faces the pressing issue of energy security and its impact on the economy, following Russia's invasion of Ukraine. The Fit-for-55 initiative aims to address climate and energy crises by fostering a coordinated response and developing a European energy and climate policy. The key objectives include reducing dependency on foreign energy sources, diversifying energy supplies, and investing in renewable energies at global and local levels in a way that benefits local communities and protects our natural resources.

Building a consensus among stakeholders is crucial, with energy efficiency being a priority. Ensuring efficient grid systems, promoting electrification of final uses, enabling storage solutions, and facilitating a just transition are vital. Collaboration at the EU level is needed to phase out gas, explore green hydrogen, and adopt circular economy solutions for renewable gases. Stable regulatory environments and a cultural mindset shift towards understanding, participation, and consensus are essential for successful energy transition. Academic institutions also play a crucial role in providing technical solutions and social sciences expertise to facilitate this transition. Collaboration and innovation are key to achieving the desired outcomes.





## VALÉRIE MASSON-DELMOTTE

*Co-Chair, Working Group I of IPCC, CEA Senior Scientist at LSCE of the Institute Pierre Simon Laplace for Climate Sciences*

### **Effective governance is key**

The 2023 IPCC report shows that climate action is progressing, but not at the pace or scale required for governments to be consistent with their own goals. Our remaining CO<sub>2</sub> budget is at 250 billion tons, which is just 6 years at today's rate of emissions.

Climate change's widespread impact, including rising sea levels, highlights the urgent need of engaging in transformation to include resilience, and reducing emissions at a faster pace. Effective governance is key, and lessons learned demonstrate options for global adaptation and emission reduction. However, a major obstacle remains: the lack of climate finance, with a gap of 3 to 6 times the required amount.



## PHILIPPE DROBINSKI

*Director of the Energy4Climate Center, IP Paris*

### **A clear implementation plan**

The game changer will come from an implementation plan with clear and quantified objectives. To convert the old energy model from centralized and controlled production with aggregated consumption to a more diffuse, distributed model with individual production and storage, needs regulation to allow self-consumption. In the new energy model, there are multiple actors at different levels – national, sub national, regional, company, and individual, so we need to develop a method to ensure compatibility with national low carbon strategy, with the deployment of solutions on the ground, and these tools don't yet exist.

We also need to develop relevant governance that makes the link easier between national level and territories and avoid silo thinking. Energy impacts water, recycling, food, land, and biodiversity, so we need holistic systemic thinking to avoid maladaptation with cross sector approaches involving all key stakeholders.



## LAURENCE TUBIANA

*CEO of the European Climate Foundation*

### **Transparency, oversight and control**

We need to see a conjunction of policies, politics, people, and geopolitics. Climate change is a political issue at a national and international level, so we need consensus and mobilization. That's why citizens' organizations are essential actors, putting pressure at political levels.

Consistency, accessibility, and equity should be prioritized in policymaking, ensuring affordable and healthy food options by revising agricultural subsidies and redirecting funds towards the energy transition instead of fossil fuel subsidies. Governments should engage in informed discussions with citizens, prioritizing equity, and involving all stakeholders to develop comprehensive solutions.

Previously, discussions on a green future were technical and uninspiring. However, a future vision must empower citizens, with decentralized energy playing a democratic role.



## ESTELLE BRACHLIANOFF

*Chief Executive Officer of Veolia*

### **Local decarbonized energy**

National, international and EU policies are essential. We need a framework to know the energy mix ambition for the country in the next 10 to 20 years. Stability and clarity are paramount for companies to invest.

Energy efficiency is the best solution, and this is where digital can help. For a typical building in Europe, we're able to save 15% - 20% of consumption by using digital solutions to monitor energy consumption more closely. A second area is using heat to produce electricity. We have a lot of spare heat which can be used for industrial processes through spare heat loopbacks. And a third way is by using alternative sources of energy, such as non-recyclable waste to produce energy, or using methanization to produce biogas. In this way, 25% of the gas we used to import from Russia can be replaced by local decarbonized energy. It still emits CO<sub>2</sub> when burned, but total CO<sub>2</sub> emissions are 60% - 80% below fossil gas, making it renewable, affordable and above all local.

# T A K E A W A Y S

Effective governance and climate finance are key challenges for mitigating climate change.

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Clear and quantified objectives, regulation, and mutual trust between science and policy are crucial for tackling climate change effectively.

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Consistency, accessibility, and equity should be prioritized in policy-making to combat climate change.

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Companies should play a role in reducing their own environmental impact and helping clients decarbonize.

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Communication, education, and providing concrete solutions are important for promoting sustainable behavior.

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National and international policies, stability, clarity, and simplicity are essential for achieving climate goals.

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The narrative surrounding climate change and citizen engagement are crucial for creating a shared vision.

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Energy efficiency, utilizing waste heat, and alternative energy sources are important sustainability solutions.

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Low-tech options and a systemic approach considering synergies and trade-offs are necessary for sustainable solutions.

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Having multiple objectives and addressing various issues simultaneously increases the chances of success in combating climate change.



# II. MOBILIZING FINANCE FOR CLIMATE: UNLOCKING THE POTENTIAL OF GREEN FINANCE AND OVERCOMING OBSTACLES



## SESSION 2

**Keynote: Jo Tyndall**, *Director for the Environment Directorate, OECD*

**Patricia Crifo**, *Professor at École Polytechnique, IP Paris & Deputy Director of the Energy4Climate Center*

**Peter Tankov**, *Professor of quantitative finance at ENSAE Paris, IP Paris*

**Paul Schreiber**, *Senior Policy Advisor at Reclaim Finance*

**Pierre-Alix Binet**, *Head of Institutional & Regulatory Affairs, La Banque Postale*

**Virginie Vitiello**, *Head of Socially Responsible Investing, Caisse des Dépôts Group*



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## JO TYNDALL

*Director for the Environment Directorate, OECD*

The urgency to address climate change at all levels has become increasingly evident, as highlighted by recent IPCC reporting. To limit global warming beyond 1.5 °C and reduce emissions rapidly, it is crucial to deliver finance on a massive scale. Financing both mitigation and adaptation efforts is necessary, considering the current levels of CO<sub>2</sub> emissions and the existing climate crisis. Although there is enough money in the system, a significant portion is misdirected, necessitating activation to channel investments into projects aligned with climate goals.

To ensure progress, it is vital to measure and track efforts. Although investors and financial institutions are increasingly committing to Paris agreement alignment, the methods used to track commitments lack consistency and evidence of real impacts. Improved and consistent metrics and methods for measuring alignment are essential. Environmental credibility is a key focus for the OECD in transition finance, especially in hard-to-abate sectors. Efficient and well-functioning markets are necessary but can only operate within planetary boundaries. Biodiversity loss and climate change are interconnected, requiring coordinated efforts. The OECD is developing a framework to help banks assess biodiversity-related risk. Looking ahead, the focus is on seizing opportunities. Sufficient funds are available to bridge the finance investment gap, and efforts continue to track progress, shift global financial markets, and mobilize private sector finance.





## PATRICIA CRIFO

*Professor at École Polytechnique, IP Paris & Deputy Director of the Energy4Climate Center*

### **Robust evaluation processes and transparency**

Over the past 20 years, green finance has grown significantly, with approximately 30% of investments now incorporating sustainability considerations. In France, around 45% of investments are in green funds. However, many people lack a clear understanding of what green finance entails, leading to skepticism about its credibility. Another obstacle is the need for tangible proof of the impact of such investments, necessitating robust evaluation processes and transparency, which is currently lacking: for the same dimensions, the same issue, the same company, different raters have different scores.

Climate change poses a threat to economic activity and financial stability, as reflected in the mandate of institutions like the Banque de France. Christine Lagarde, President of the European Central Bank (ECB), has highlighted the ECB's strategy for addressing climate change. It involves three tools; first, to assess the impact of climate change to analyze and understand the dynamics to improve public knowledge. Second to advise, by providing the supporting framework through dialogue, expertise, and advocacy. And third to act, from a supervisory perspective through a combination of macroeconomic measures, monetary policy, and financial policy measures across all dimensions.



## PIERRE-ALIX BINET

*Head of Institutional and Regulatory Affairs, La Banque Postale*

### **Exit from all fossil fuels**

The role of banks is to allocate capital, and this is important because they have the capacity to transform the business model of all the economic players. It needs to be based on science-backed conditions, but essentially, banks need to exit from all fossil fuels and provide services, resources, and financial information to companies to enable them to implement their transformation plans as effectively as possible. Because greenwashing is the enemy of sustainable finance, the question of qualifying our products is key. For green loans, they must meet at least one of the six goals of the European taxonomy, so we allocate the loan to a defined objective for a minimum of €300,000, a threshold that is much lower than the market average. It's one of our tools to democratize sustainable finance in the territories.





## PETER TANKOV

*Professor of quantitative finance at ENSAE Paris, IP Paris*

### **Greenwashing: improve the disclosure framework**

Legislation in Europe exists to prevent greenwashing, but the best way to avoid it is to improve the disclosure framework. At present, disclosure is not compulsory for all companies, smaller companies do not disclose their carbon emissions. But disclosing carbon emissions on their own is not enough. We need to be able to estimate future emissions to evaluate transition perspectives, firms need to disclose their transition plans and we should be able to check whether these plans are credible.

Also, to avoid greenwashing, tools can be developed by us as researchers. For example, AI tools and machine learning tools have been developed to analyze company reports, because sometimes the information is there, but it's difficult to find and compare. We need to lessen loopholes by improving disclosure thresholds and strengthening frameworks. The data that is disclosed by companies should be made publicly available, and there is a proposition for the NZPDU – the net zero public data utility – to make this available for free. Right now, environmental data is sold by data providers, who use this to compute ESG ratings, and there is a big problem in the industry over divergence in ESG ratings and other indicators from the different providers. Regulation is needed to make the framework more robust.



## PAUL SCHREIBER

*Senior Policy Advisor at Reclaim Finance*

### **Reliable scientific criteria and a focus on transition benefits**

A few examples of efficient green measures for financing include first the development of a class of assets that tackles the transition of the whole system. Currently, the allocation of financial flows has not shifted significantly towards green investments. For example, if you look at the energy sector, the new sources of renewable energy are only adding up to the existing supply of energy, they are not replacing fossil fuels.

Moreover, financial institutions still heavily invest in fossil fuels, with a ratio of renewable/clean energy investments to fossil fuel investments far below the recommended levels. Secondly, the measure must ensure that what is labeled as green is genuinely environmentally friendly. Instances of green bonds financing coal projects or airport expansions highlight the issue of greenwashing. Reliable scientific criteria and a focus on transition benefits are necessary.

A recent report by the European Supervisory Authorities provides a comprehensive definition of green finance and emphasizes the problem of greenwashing, posing challenges for many financial institutions.



## VIRGINIE VITIELLO

*Head of Socially Responsible Investing, Caisse des Dépôts Group*

### **Need to report on biodiversity, climate, and ESG risk**

There is no correlation between the success of ESG criteria and financial performance, so we need financial actors to play an active role in transforming the economy by integrating environmental and social issues into their processes.

In terms of regulation, article 29 of the French law on energy and climate, is raising the level of transparency and this represents an important shift. From this year onwards, financial institutions will need to report on biodiversity, climate, and ESG risk, so you will see a big difference between this year's and last year's reports. This means reporting good data as well as not so good data, such as brown exposure.

But to raise ESG to the same level as finance sometimes you need to have lower ROI expectations. To make an impact – for example projects in wastewater management or heating networks, they are important energy transition projects that are important for the regions, but with lower returns.



# T A K E A W A Y S

Mobilizing private sector finance is essential, and public climate finance can catalyze private investment by providing the right policy environment and de-risking investments.

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Shifting global financial markets from grey to green requires a comprehensive response from the entire financial system, including analyzing investment approaches and improving transparency and comparability of ESG reporting.

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Regulators and investors can better include climate risk by assessing the impact, providing a supporting framework, and taking action from a supervisory perspective.

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Addressing climate change with equity and social acceptability is crucial for a just transition.

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Green finance benefits both investors and the environment by controlling climate risks and avoiding future financial and economic crises.

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Greenwashing can be remedied by improving the disclosure framework, estimating future emissions, disclosing transition plans, and developing tools for analysis and comparison. Transparency and reporting on biodiversity, climate, and ESG risk are increasing through regulations, raising the level of transparency and reducing greenwashing.

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Investments can be attracted back by reducing risk premiums, providing incentives for energy efficiency projects, and ensuring investments do not lead to carbon lock-in.

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Efficient green measures for financing include shifting financial flows towards green investments and ensuring that what is labeled as green is genuinely environmentally friendly.

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Green finance can become truly green through stricter labeling, regulatory and supervisory changes, and addressing both quality and volume.

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Corporates and financial institutions need to accurately report on EU climate disclosure requirements, and regulators will verify the quality and meaningfulness of disclosures.

# III. REGULATING FOR SUSTAINABLE CONSUMPTION: EMPOWERING CONSUMERS IN A COMPLEX MARKET LANDSCAPE



## SESSION 3

**Serge Abiteboul**, Board member of the French Electronic Communications Regulatory Authority (Arcep).

**Nathalie Stubler**, Special advisor on decarbonization for Air France KLM Group

**Thibaud Vergé**, Vice President of the French Competition Authority

**Isabelle Spiegel**, Global Head of Environment, Vinci

**Pierre-Jean Benghozi**, Professor of Digital Economics at Ecole Polytechnique, IP Paris



[Watch the replay of the session](#)



## NATHALIE STUBLER

*Special advisor on decarbonization for Air France KLM group*

### **Find a reasonable price the consumer is willing to pay**

The actual task of decarbonizing the aviation industry is colossal, but we have to do it, there is no choice. The entire industry has committed to net zero by 2050. It means reducing CO<sub>2</sub> per passenger kilometer by 30% compared to 2019. So far, we have reduced carbon intensity by 20% between 2005 and 2019.

How will we do this? Through 3 levers:

1. Fleet renewal – modern planes are more efficient, the latest planes can save up to 15% of fuel consumption, and up to 25% for long-haul flights. This represents important CO<sub>2</sub> savings, but they cost lots of money – around €2bn per year.
2. By making operations more efficient – we are saving around 5% by engaging all our staff, and every point counts. We have a collaboration with a French start-up which is using data to monitor best practice for eco-piloting, even when the aircraft is climbing.
3. Sustainable aviation fuel (SAF) – this is developing and where regulation is supporting the industry. France was ahead with the requirement to use 1% of SAF in 2022, and European regulation which has not yet been voted, will push to increase that to 2% in 2025, 6% by 2030 and then 20% by 2035.

The problem with SAF is that it doesn't yet exist in sufficient quantities, so regulation is giving the signal to industry that the production of biofuels or electricity e-fuels needs to be developed. These are part of the equation, and as these products don't exist today, it will be super expensive and an extra cost for consumers. Today, we are engaging with corporate customers to apply a small sustainability surcharge. The aim is to find a reasonable price the consumer is willing to pay – it's the start of a long journey, but it illustrates what regulation can do. In 2022, we used 42,000 tons of SAF, this is a small amount, but it represents 17% of worldwide production!



## SERGE ABITEBOUL

*Board member of the French Electronic Communications Regulatory Authority*

### Regulations are needed to guide

Young people have strong opinions and are concerned with sustainability, but when it comes to choosing there is a tension. They want all the latest technology gadgets but at the same time they want sustainability. They know that technology can have a negative impact; it has some important positive impacts too, but they do not feel informed enough to know what to do.

How do industries react to that? Unfortunately, with more and more greenwashing! If you talk to people in the industry, they want to do things, but at the same time the companies have to make a profit – so there is tension inside companies, between those who want to see more sustainability and those who want to maintain market share. Industry is at the core of the solution, but regulations are needed to guide them with rules that must be followed.



## PIERRE-JEAN BENGHOZI

*Professor of Digital Economics at École Polytechnique, IP Paris*

### Regulation by data

Customers have the power to choose and pay for goods and services, but they are also inconsistent in their way of thinking as a citizen and as a consumer. As a citizen they are willing to reduce the effect of industry on the climate, on biodiversity and so on, but as a consumer, they are trying to find the lowest price, to have complete cover and travel. This is the main difficulty for regulators, but also for politicians, to find the right balance to reconcile these two perspectives. How do we provide an overall transformation view of desirable change but how also to implement such huge change into small decisions that help the consumers to make the right decisions.

This is what we mean when we talk of regulation by data. By providing data, ratings, and KPI, we can help consumers to change their mind and take decisions based on alternative criteria, not just desirability or low prices.



## THIBAUD VERGÉ

*Vice President of the French Competition Authority*

### **Help firms build trust with their consumers**

Consumers often find it difficult to identify the right products. I can give two examples of cases the competition authority has worked on. First regarding BPA-free plastic bottles for babies. BPA has been banned in all food containers since 2015, but it's also used in epoxy-resins that are used in the linings of tins for canned food. But firms have been colluding to hide this information from consumers and delay implementation of this regulation for as long as possible. The case is still ongoing. We had a similar situation for linoleum floors, firms committed together not to communicate on the environmental quality of the product, so as not to compete on that aspect.

This leads to a lack of trust by consumers, and the survey showed that half don't believe the sustainability claims made by firms. The question is how do we help firms build trust with their consumers? There needs to be a trade-off between letting firms make the claims they want for their products, allowing them to compete on that dimension, to innovate and bring new products to markets, but at the same time creating common ways to advertise and label products, to build trust for consumers. But this can only work with market regulation and consumer protection agencies.



## ISABELLE SPIEGEL

*Global Head of Environment, VINCI*

### **Make the messages clear and simple**

In terms of regulation, there needs to be a balance. Regulation is important, but it can also be a burden, which can distract from the strategic vision. For Vinci, we know which sectors and in which fields we can influence and make a difference. For energy efficiency, we know where we can act, there's no single solution, which is why sharing our return on experience is important.

To build trust with our clients, it's up to us to bring together the right ecosystem of advisors, scientists, and academics, to help us. But when it comes to marketing, we need to make the messages clear and simple for customers, so for example, when we talk about low carbon concrete, we mean just that.

# T A K E A W A Y S

Mobilizing private sector finance is essential, and public climate finance can catalyze private investment by providing the right policy environment and de-risking investments.

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The aviation sector aims to decarbonize and achieve net-zero emissions by 2050. This includes fleet renewal, making operations more efficient, and promoting the use of sustainable aviation fuel (SAF) through regulations.

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European regulation plays a role in convincing industries to offer sustainable goods and services by measuring effectiveness and efficiency, incorporating externalities, and promoting cooperation among regulators.

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Consumers have the power to choose and pay for goods and services, but their behavior as citizens and consumers often conflicts. Regulation by data can help consumers make decisions based on sustainability criteria rather than just price.

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Data and ratings can help build trust with consumers if they are trustworthy and not manipulated by firms. However, some platforms may have unreliable ratings.

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Accelerating production of sustainable goods requires finding a balance between consumer demand and supply. Incentives like subsidies can stimulate demand, but sufficient supply and reasonable prices are necessary.

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The role of regulators is to guide consumers by providing data, information, and expert opinions to help them make informed decisions. Regulators also help consumers understand the complexity of sustainable development issues and prevent greenwashing.



# REFLECTIONS

*Together for climate action*



# IV BUILDING BRIDGES: INTERNATIONAL COLLABORATIONS IN CLIMATE ACTION (LOCAL, REGIONAL, NATIONAL ACTORS IN MOTION)

From Hawaii to India through Slovenia, discover the successful projects of three actors working at local, regional and national levels across the world.



## RAJENDRA SHENDE

*Founder of Green TERRE Foundation, Former Director UNEP, Coordinating Lead Author of the IPCC, which was awarded the Nobel Peace Prize in 2007*

### Transforming awareness into action: empowering youth initiatives

The Green TERRE Foundation (GTF) is a forum for action working with youth communities to build solutions for their future. With 1.5 billion young people worldwide aged 18-24, their out-of-the-box, innovative ideas, and the potential for creative innovation make them a crucial demographic to involve.

GTF highlights the importance of training and empowering young individuals, enabling them to contribute urgently needed solutions. For instance, university students have shown that using sheep to maintain lawns can reduce energy consumption and carbon emissions while providing natural fertilization.

The MIT – ADT University in India has demonstrated practical examples of sustainability. The green campus collects all green residues, including canteen waste and converts them into fertilizer, generating income through its sale and utilizing the funds for social foresting projects. Their Smart Campus Cloud program is using sensors and digital tools to measure energy efficiency, aiming for carbon neutrality by incorporating renewable energy and offsetting residual emissions through planting trees. This really is an example of learning by doing, using a springboard rather than blackboard, to understand carbon neutrality through a balance of emitting and absorbing CO<sub>2</sub>.

To achieve the global target of limiting global temperature rise to 1.5 degrees, GTF emphasizes the role of young people as the «vaccine» against climate change. They propose incentivizing sustainable behavior through systems of credits or incentives that reward emission reductions among young individuals. For example, measuring students' CO<sub>2</sub> emissions and providing credits to those with low carbon scores could significantly influence behavior. Chinese students are already working on similar tools to raise awareness of carbon footprints. And whilst it raises issues for privacy, maybe we should be treating the climate crisis just like the pandemic.

I believe the climate crisis calls for a worldwide moment. A moment that brings together all university youths, through regional hubs of learning by doing, monitoring by sharing, speeding up actions by digitalization, just doing it and getting on with it.



[Watch the replay](#)



## KAHEA PACHECO

*Co-Executive Director, Women's Earth Alliance*

### **Environmental protection, placing women at the heart of the matter**

The mission of the Women's Earth Alliance (WEA) is to train women leaders to develop solutions for the climate and environment. Women form the backbone of communities, providing water, food, energy, and care for children and their elders, but when disasters strike, they are disproportionately impacted. Their positions are exacerbated by climate change, to the extent that 80% of climate refugees are women. It's because of their central role within communities that the WEA aims to empower women and amplify their voices through community-driven development efforts based on local needs and perspectives.

There is the example of a village in Africa where women had to walk miles to fetch water, so a development agency paid to install a pump in the middle of the village. But they came back after a year to find that the pump wasn't used. Why? Because the women's walk to fetch water was their community support moment, it wasn't just about the water, it was the occasion to chat with friends, discuss their problems, away from the eyes and ears of the rest of the village or the men, and they didn't want to give this up. That's why development considerations need to be taken from the ground up. The WEA has carried out research which shows that climate violence through extractive industries leads to increased crime and violence in communities, and we talked with community members to identify measures, or legal support that could bring about change. We found that the community wanted resources, including education, medicines, and workshops, to create a "recipe book" for healing, built around community-based solutions.

When we increase women's economic power, the outcomes for families and communities are huge, because women invest their additional income in their children's education. One example is the international women's water initiatives, which has now trained over 13,000 women in west Africa. To protect the last remaining tropical rainforest in Kenya, women are being trained in skills to create tree nurseries and plant new trees. So rather than saying to communities "don't cut down trees for fuel", this program shows how to manage plantations in a sustainable way while providing economic opportunities.

The climate crisis requires multi-stakeholder solutions with input from the bottom-up, to ensure that solutions are appropriate and match specific needs. Consulting communities isn't enough, they need to be involved in decision making as a partner, and this is the goal of the WEA. When women thrive, communities and the earth thrive!



[Watch the replay](#)



## TJAŠA FICKO

*Deputy Mayor of Ljubljana, Slovenia*

### **Green ambition: harnessing environmental awareness through citizens**

Ljubljana, the European Green Capital of 2016, began its journey towards sustainability in 2007 by sharing its vision, setting an agenda, and communicating internally. It is a small city of 300,000 people, 500 administrators and 12,000 direct workers, but 16 years ago, people worked in silos, each with their own agenda, so we set out to communicate with everyone, across all departments to make sure that everyone knew and understood their role in the project.

It also involved being close to people, listening to citizens and explaining our plans. The mayor organized open door days to give everyone the opportunity to share their views. The challenge was to prioritize pedestrians over cars in the city center. To achieve this, the city closed the center to all vehicles, improved infrastructure by adding new bridges to shorten distances, and provided incentives for electric vehicles. Before the changes, transport in the center was 60% cars and 19% pedestrian. Now the share is 35% pedestrian and 41% cars. Bike sharing systems were also introduced and the city now has 55,000 regular active users.

The city has also introduced sustainable procurement policies, which means that in line with national regulations, 70% of city purchases must meet sustainability criteria, for example the paper towels used in schools, hospitals, and public buildings are all made from recycled packaging. This sets an example and makes it easier to convince fellow citizens to follow suit.

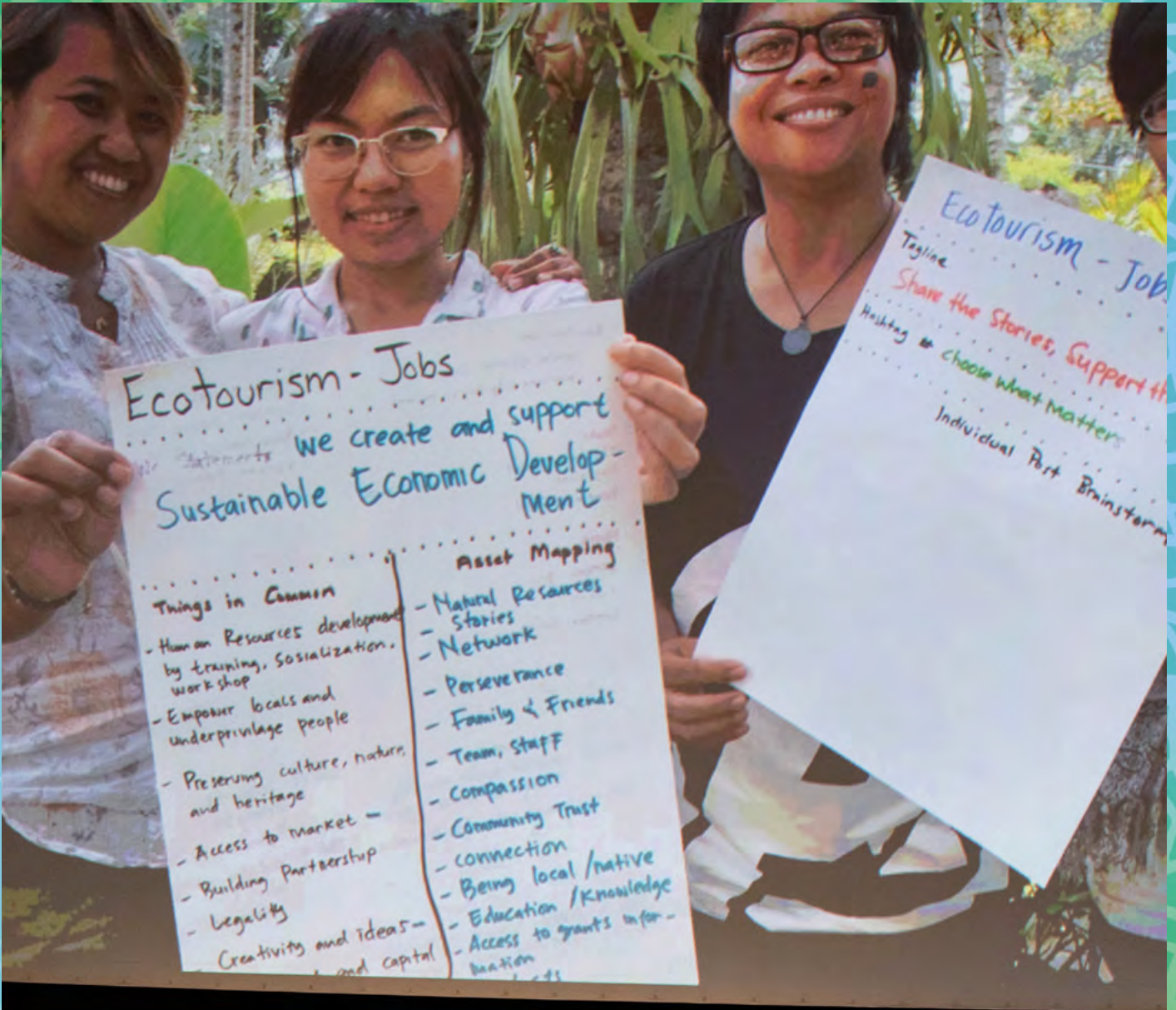
Preserving green spaces and ensuring a sustainable future for generations to come is a priority for Ljubljana. Winning the European Green Capital award has motivated the city to continue its progress and share its experiences with other cities. Ljubljana actively learns from other cities and is part of the EU mission to have 100 carbon-neutral cities by 2030.

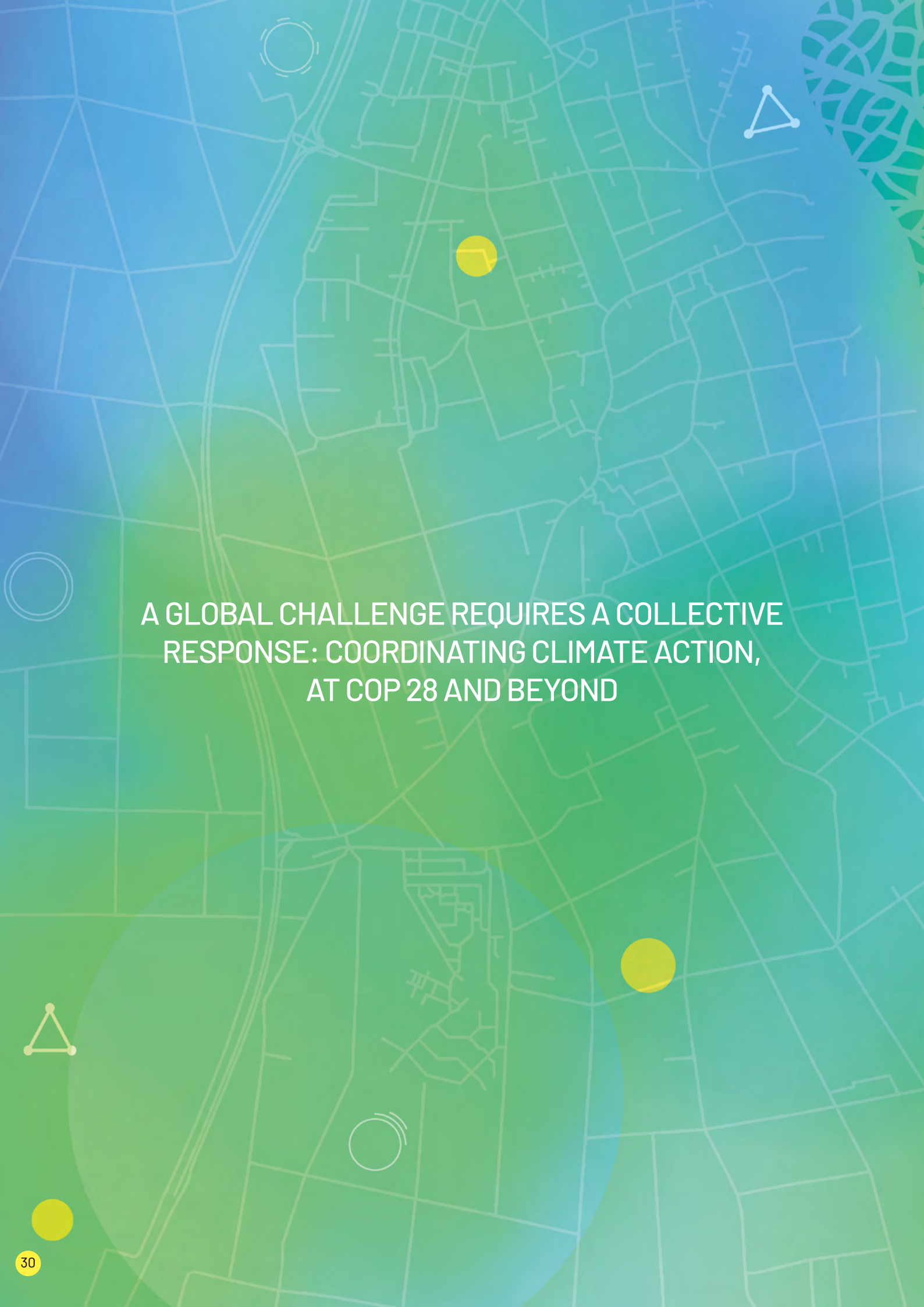
The city's new deputy mayor, an architect and urban planner, is driving the efforts to achieve self-sufficiency in food and energy through initiatives like central heating, waste management, and the circular economy. Ljubljana acknowledges the increasing demands of citizens for sustainability and believes that having clear basic values and promoting a green and healthy lifestyle are crucial.

While challenges lie ahead and the journey is ongoing, Ljubljana remains committed to its sustainable vision. The city aspires to inspire and welcomes visitors who want to learn from its experiences. With a focus on collaboration with the private sector and other stakeholders, Ljubljana is actively working towards its vision for 2045 and contributing to a greener future.



[Watch the replay](#)





A GLOBAL CHALLENGE REQUIRES A COLLECTIVE  
RESPONSE: COORDINATING CLIMATE ACTION,  
AT COP 28 AND BEYOND



Through consultation, cooperation and collaboration, COP 28 aims to deliver an action plan that speaks to the global south and the global north, to the public and the private sector to achieve concrete results.

Countries around the world must work together to decarbonize while we build a new energy system, capable of transitioning even the most carbon-emitting industries. We must focus on phasing out fossil fuel emissions, while phasing up viable, affordable, zero-carbon alternatives.

It is vital that this year, developed countries demonstrate that they are fulfilling their \$100 billion commitment on climate finance. Regulation is essential for this, which is why our frameworks must keep evolving to make sure we meet our objectives and ensure that public and private collective action follows.

The poorest nations make up over half of the world's population, yet they account for only 12% of emissions, with 800 million people still without access to energy. Giving back to vulnerable nations that have suffered losses from climate change will be our priority. The UAE is honored to be hosting COP 28 and we are committed to ensuring that it is a turning point in our committed efforts against climate change that charts a path for the years to come.

**Ali Alamari**

*Head of Media Affairs at the UAE Embassy in France on behalf of HE Hend Al Otaiba, UAE Ambassador to France*

# CONCLUSION

## ACCELERATING CLIMATE ACTION: THE AGENDA FOR COP 28

***The following conclusion summarizes the various viewpoints, insights, conversations, and debates surrounding the COP 28 agenda, as expressed by speakers throughout the REFLEXIONS Conference.***

In conclusion, as we look forward to COP 28, it is evident that the global community stands at a pivotal juncture in the fight against climate change. The importance of intergovernmental meetings, such as the Conference of the Parties, cannot be overstated, as they provide the platform for sharing invaluable scientific insights and charting the course for collective action. Building on the momentum of COP 26 and 27, COP 28 is poised to be a watershed moment, setting the stage for transformative progress.

The urgency of the climate crisis demands that we collectively address the elephant in the room: fossil fuel dependency. The inclusion of discussions on phasing out fossil fuel subsidies and the elimination of coal, oil, and gas on the COP 28 agenda underscores the recognition that tangible, ambitious steps must be taken to achieve substantial emission reductions. This summit offers a unique opportunity for nations heavily reliant on fossil fuels to demonstrate leadership through diversification, fostering a greener and more sustainable future for all.

The finance-related negotiations slated for COP 28 hold immense significance in propelling our climate aspirations forward. Establishing new climate finance goals, creating a dedicated loss and damage fund, and reforming financial structures underscore the commitment to supporting vulnerable countries and mitigating the effects of climate change.





The OECD's unwavering dedication to urgency, credibility, coherence, and consistency provides a solid framework for these efforts. Moreover, COP 28's agenda reflects an inspiring commitment to action. From the world's first global stock take to the ambitious goals of tripling renewables, doubling hydrogen production, and reducing CO2 emissions by 43% by 2030, the summit epitomizes the shared determination to achieve the targets set forth in the Paris Agreement. The fulfillment of the \$100 billion commitment on climate finance by developed countries is not just a monetary commitment, but a testament to the solidarity needed to confront this global challenge.

Regulation, evolving frameworks, and innovative partnerships are the cornerstones of success in the battle against climate change. COP 28 acknowledges the importance of these facets, setting the stage for mobilizing private capital and ensuring that the necessary resources flow towards adaptation initiatives, with the aim of doubling financing to reach \$40 billion annually.

In a world where vulnerable nations bear the brunt of climate change impacts, COP28 places significant emphasis on addressing climate losses and empowering these nations. This summit acknowledges the moral imperative of giving back and ensuring that the global response is both equitable and inclusive.

As we anticipate COP 28, we stand on the cusp of meaningful change. The agenda not only reflects our aspirations but also our responsibility to future generations. With science as our guide and consensus as our driving force, COP 28 holds the promise of being a milestone where nations come together, commitments turn into actions, and the trajectory of our planet is altered for the better. The time for transformative action is now, and the importance of the agenda for COP 28 cannot be overstated in this pivotal journey toward a sustainable and resilient future.



# TO KNOW MORE ABOUT CLIMATE CHANGE REGULATION

## CLIMATE CHANGE: FROM AWARENESS TO GOVERNANCE

In response to a climate emergency that has been scientifically documented for decades, a new form of global governance has been initiated under the leadership of the United Nations. Warned by the successive reports of the scientific experts of the IPCC (Intergovernmental Panel on Climate Change), the governments that have signed the Paris Agreement are committed to carbon neutrality. But will the reduction rate of their greenhouse gas emissions be up to one of the major challenges of the 21<sup>st</sup> century?

[READ HERE](#)

## GREEN FINANCE, THE DRIVING FORCE BEHIND THE TRANSITION?

Recent years have seen the popularization of the carbon footprint concept. Applied at different scales and in different contexts, it indicates the negative contribution of an actor or project to global warming. This concept can also be applied to savings, whose impact, although indirect, is equally significant. This indirect impact should not, however, overshadow the potential of finance, if it is used to help our societies make the transition, particularly in the face of the immense challenges posed by the climate crisis.

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## THE CHALLENGES OF DECARBONIZING THE GLOBAL ECONOMY

According to the latest IPCC report, greenhouse gas emissions between 2010 and 2019 represent 80% of the «carbon budget» that humanity still has left before exceeding the 1.5°C target set by the Paris Agreement. In order to preserve this budget, we need to transform the global economy and change consumption behaviors that are the most damaging to climate. But decarbonizing technologies and processes does not come without a price tag. So what measures should be put in place to encourage private-sector players to invest in the technologies needed to decarbonize the global economy?

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## THE TRANSITION TO LOW-CARBON SOCIETIES

The fight against global warming is a crucial challenge that requires us to make the transition to carbon neutrality by the end of the century at the latest. To achieve this balance between anthropogenic emissions and absorptions of greenhouse gases, we need to fundamentally transform our production and consumption patterns. This transition requires the concerted efforts of public authorities, the private sector and civil society.

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## CIVIL SOCIETY RINGS THE CLIMATE ALARM

The report of the sixth assessment by the Intergovernmental Panel on Climate Change (IPCC), published in March 2023, is unequivocal: human-induced climate change is widespread, rapid and intensifying. Extreme climatic phenomena - heat waves, heavy rainfall, drought - are becoming more frequent and more severe; climate drift is already affecting every inhabited region on the planet, and the upheavals will become more pronounced as global warming continues. In the face of this emergency, what can civil society do?

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