# Short interviews

Stefan Ambec (TSE), Estelle Cantillon (ULB), Matti Liski (Aalto), and Ulrich Wagner (Mannheim) visited us to teach at the PhD Summer School on the Foundations of Climate and Energy Policies. We could not miss the opportunity to ask them about their work and their views on key issues such as skyrocketing energy prices, emissions trading, the risk of carbon leakge, the design of compensation schemes...and much more!

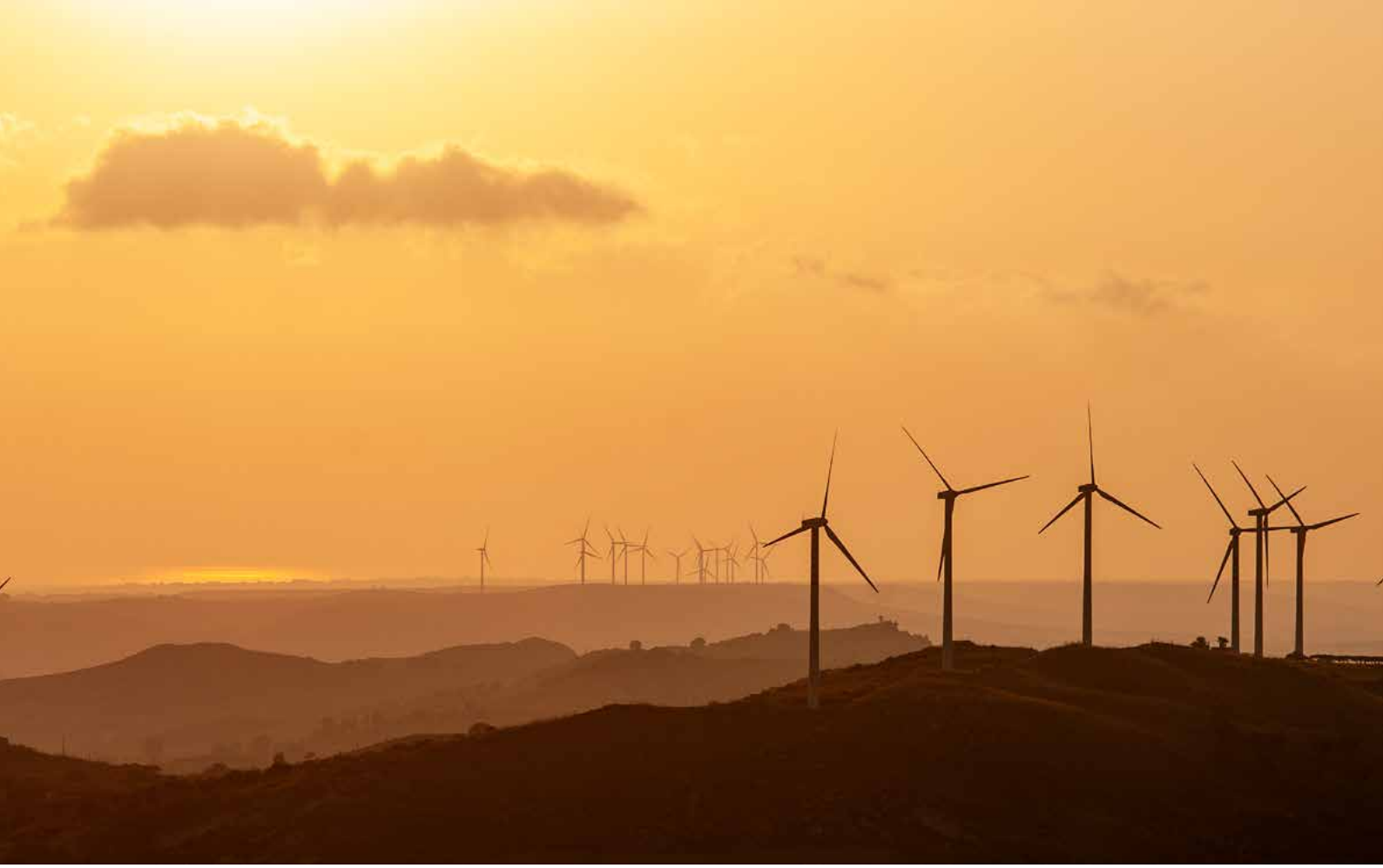
## Interviewing
# Stefan Ambec

### Professor of Economics, Toulouse School of Economics

**Energy prices are skyrocketing everywhere in Europe. Do you think this could threaten the energy transition?**

Of course, everyone has in mind the yellow vest protest, especially in France. No doubt that the energy transition is costly and therefore energy will be more expensive in the future. Several studies show that a 100% renewable energy mix can be achieved within a reasonable cost range by focusing on long run costs. However, they fail to consider the transition itself which requires massive investments in renewable capacity, in energy storage, as well as compensations for the phasing out of coal, within a decade or two. On the other hand, carbon pricing, which is an important building block of the energy transition, generates revenues that can help to smooth the process. Those who are the most impacted by higher energy prices should receive a high share of these revenues. But timing matters. We should move quickly so that consumers and firms can adapt to a world of more expensive energy.

**The increase in electricity prices has been driven by increases in gas and**



**$CO_2$ prices, yet the vast part of electricity generation does not consume neither gas nor $CO_2$ permits. Do you envisage any changes in electricity market design in Europe that could disentangle electricity prices from gas prices?**

Economic efficiency requires that prices reflect costs. In my joint work with Claude Crampes, we show that, even if thermal power is a small part of electricity generation, the intermittency of renewables (wind and solar power) makes thermal energy a main driver of the electricity Price both at the wholesale and retail levels. This is so as long as termal power is used as a backup when windmills and solar panels are not producing enough. The solution is to rely more on energy storage and interconnections but that's expensive as well. Real-time pricing, i.e., charging wholesale prices to consumers, can be another solution because it gives the opportunity to avoid consuming during periods of termal generation with higher prices. However, it is not clear to me that consumers will take it!

**You were appointed by President Macron to lead the evaluation committee on the EU-Mercosur trade agreement. Do you think that the current intensity of trade flows could endanger the fight against climate change?**

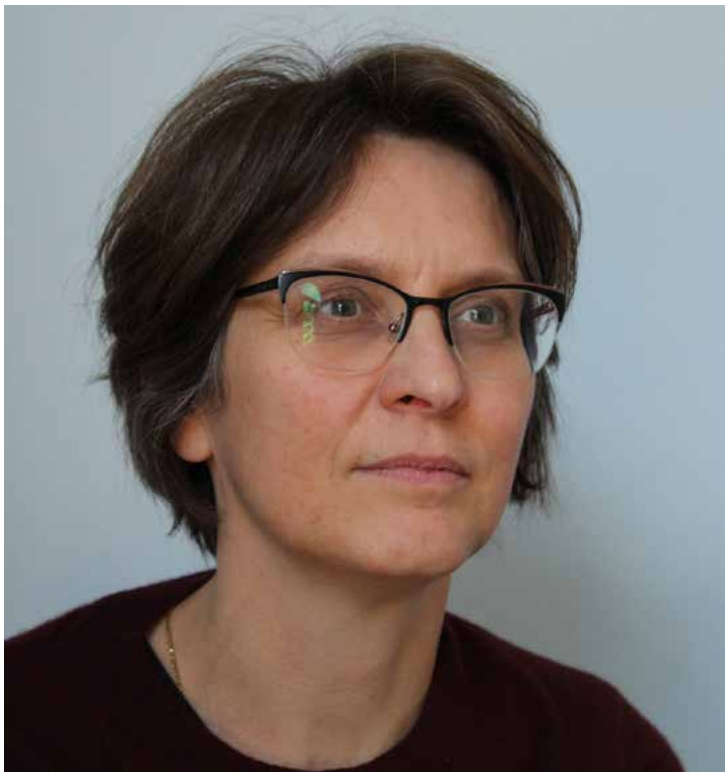
## If we reach carbon neutrality by moving abroad the production process of all carbon intensive goods, we completely miss the point!

Yes, we have overlooked the carbon content of the trade flows. The carbon footprint of imported products has increased in Europe. According to the French Haut Conseil pour le Climat, imported emissions now exceed the territorial emissions of the average French citizen. If we reach carbon neutrality by moving abroad the production process of all carbon intensive goods, we completely miss the point! ·

Interviewing

# Estelle Cantillon

## Professor of Economics and FNRS Research Director, Université Libre de Bruxelles



**The EU emissions trading system (ETS) is a cornerstone of the EU's policy to combat climate change. Since its introduction in 2005, this market has evolved importantly over several phases and has served as a model for other ETS schemes worldwide. What can be considered the key learnings from the EU ETS to create an effective carbon market?**

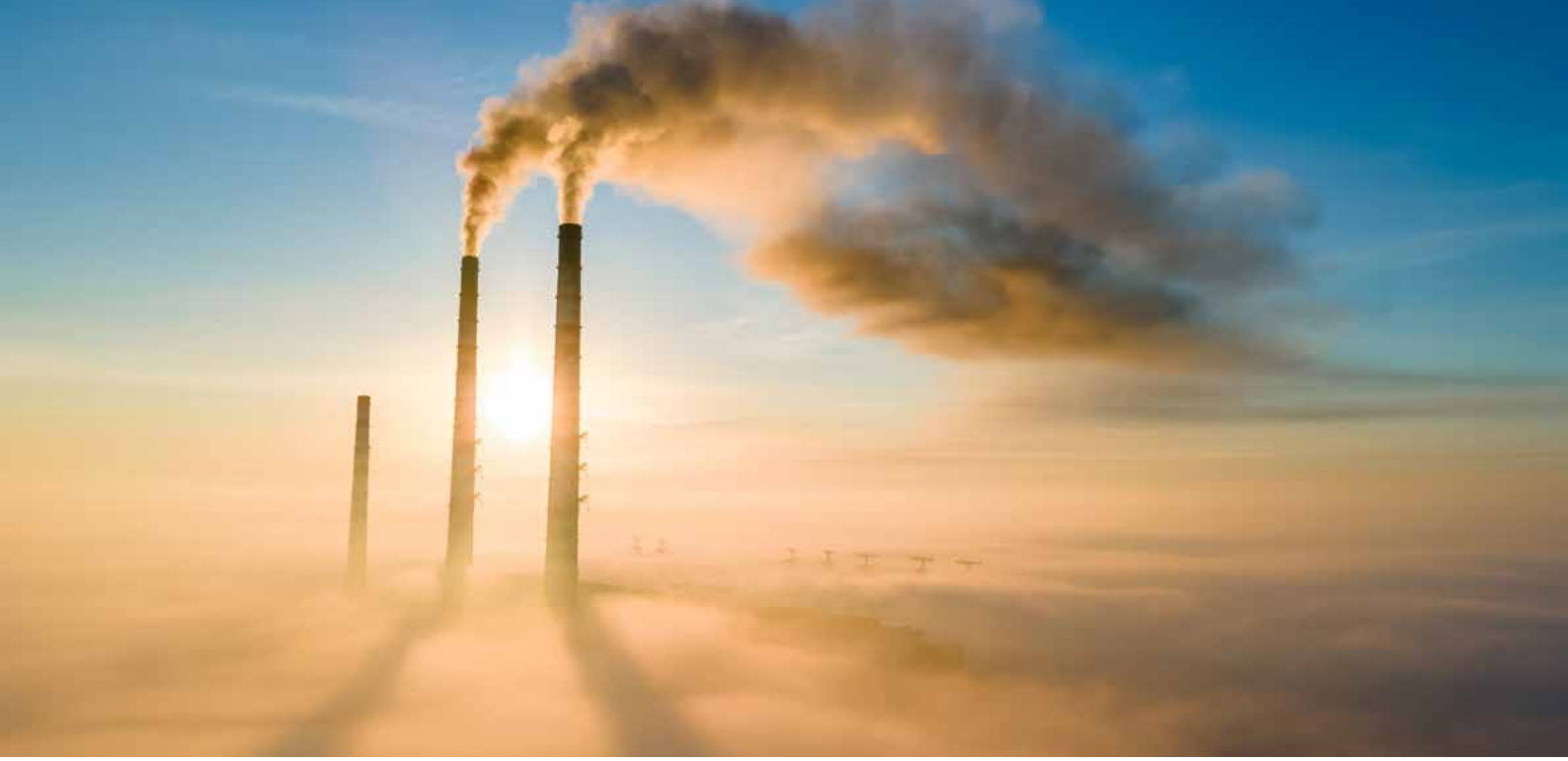
> One needs to think carefully about design to support a healthy market development and make sure the market accomplishes what it is intended to do

That market design and market regulation matter! There is no such thing as our textbook "Walrasian auctioneer". One needs to think carefully about design to support a healthy market development and make sure the market accomplishes what it is intended to do. Emission markets are also financial markets, to which non-compliance traders (traders who are not facing an emission cap under the ETS) can contribute positively. But this also requires proper supervision, a lesson some Member States and market participants learned at a high cost in the past (VAT fraud, hacking of accounts).

**Which factors do you consider are limiting the effectiveness of the EU ETS?**

The volatility of prices is an issue. Prices of allowances are extremely volatile relative to other commodities, despite the fact that the market allows participants to smooth their purchases over time (allowances can be banked, and they can be borrowed to some extent). Price volatility is an issue because most of the decarbonisation options outside of the electricity sector involve sizable long-term investments. Uncertainty is never good for investments. Another issue is the free allocation of allowances to some sectors which, empirical evidence has shown, has limited the decarbonisation efforts in these sectors. On that front, the future introduction of a carbon border adjustment mechanism is good news. It will put EU firms on the same level playing field as non-EU firms exporting to the EU, without reducing their incentives to invest.

**We have recently seen a surge in the emission permit prices that have doubled in the last 9 months, from nearly**



**30 Euros per ton of CO2 in January to 60 Euros in September. Do you think this increase is related to structural changes in the market?**

The recent price hike is due to a combination of factors. Some are conjunctural like the current high level of prices for gas that is bringing coal back into the electricity production mix, thereby increasing the demand (and price) for allowances. Another conjunctural factor is the solid economic recovery that we are witnessing in Europe. But some causes are indeed more structural. The introduction of the Market Stability Reserve has supported prices by removing excess allowances and implicitly imposing a steeper emissions reduction path. Another structural development is the massive entry of non-compliance traders: traders using carbon prices to hedge against inflation, pensions funds eager to green their portfolios. These are developments to watch as they contribute to building up demand for allowances in a market that is not designed for this purpose.

**Would you consider that this level of prices make other climate policies obsolete?**

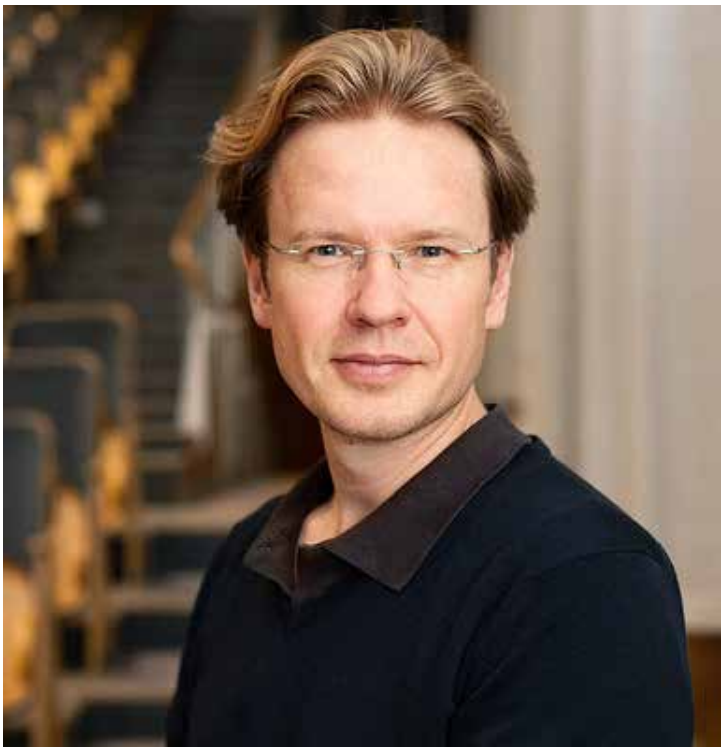
No, not at all. Putting a price is very important but the impact on firms and consumers depends on their ability to find alternatives. The easier it is to substitute away from carbon-intensive alternatives, the lower the costs for consumers and other end-users. We are talking for example about how we design our cities to reduce the need to travel and the ability to use other modes of transportation including walking and biking. We are talking about infrastructure investment for transporting heat (district heating) and hydrogen. We are also talking about R&D and incentives to bring some of the most novel technologies closer to market. Such policies complement rather than substitute for a carbon price. And the list is actually longer, we need to act at all levels, and this requires a comprehensive policy package. This is what the Green Deal proposes ·

The recent price hike is due to a combination of factors. Some are conjunctural like the current high level of prices for gas that is bringing coal back into the electricity production mix, thereby increasing the demand (and price) for allowances

Interviewing

# Matti Liski

## Professor of Economics, Aalto University School of Business



**What are your recent projects? What are you currently working on?**

The project that has taken all my time in recent months is my joint work with François Salanié. In this project, we analyze how to be prepared for potential catastrophes that may be already underway. In this situation, it is not clear whether we should take actions to prevent the catastrophe or, instead, whether we should focus on how to deal with its consequences. Our model allows to base our choice on historical data and stresses the importance of the timing of previous events. For instance, we find that strong pollution controls should be imposed if the current level of emissions has been approached quickly or if unknowns cannot be ruled out.

**There is a wide consensus among economists and policy makers about the effectiveness of carbon pricing. However, these policies are usually unpopular, and their implementation sometimes leads to political backlash. What is in your opinion the best way to build public support for carbon prices?**

In my view best way to build public support for carbon prices is through rebates, but they must be transparent and we must pay attention at how they are perceived by citizens. Fuel taxes are contentious because you see them each time at the pump. The same should apply to rebates. For instance, one should collect them while filling the tank, although they should not depend on the amount one buys to retain the proper incentives.

**Another important concern regarding European Climate policy is the potential for carbon leakage. How**

**important is this problem? Would you favor mechanisms that subsidize firms over other proposals such as carbon border adjustment mechanisms (CBA)?**

Recent research has shown that sectors under leakage risk should not be compensated by carbon tax refunds or by being excluded from regulation. In this sense, I think that the CBA has a strong potential for avoiding carbon leakage, but we would have to develop the EU proposal further. The CBA should not just focus on pricing carbon: its design must take into account the leakage risk of each sector, using appropriate elasticities that describe that risk.

**Given the uncertainty involved in estimating damages and other important parameters, what is your view about the practical implementation of optimal carbon pricing models? How much should we rely on them for actual policy practice?**

One price for all sectors is unlikely to work because of various constraints on the feasible time path for reductions (political, maturity of alternative technologies, etc....).

I think we should adopt a carbon budget approach, accepting that different sectors have different budgets. One price for all sectors is unlikely to work because of various constraints on the feasible time path for reductions (political, maturity of alternative technologies, etc....). Transport could meet its targets by 2035, buildings later, and so forth. We may even have to accept regional differences in budgets. This is not efficient in a traditional sense, but the price differences reflect various constraints that are unlikely to be overcome in the short run ·

Interviewing

# Ulrich Wagner

## Professor of Economics, University of Mannheim

**What are your recent projects?**

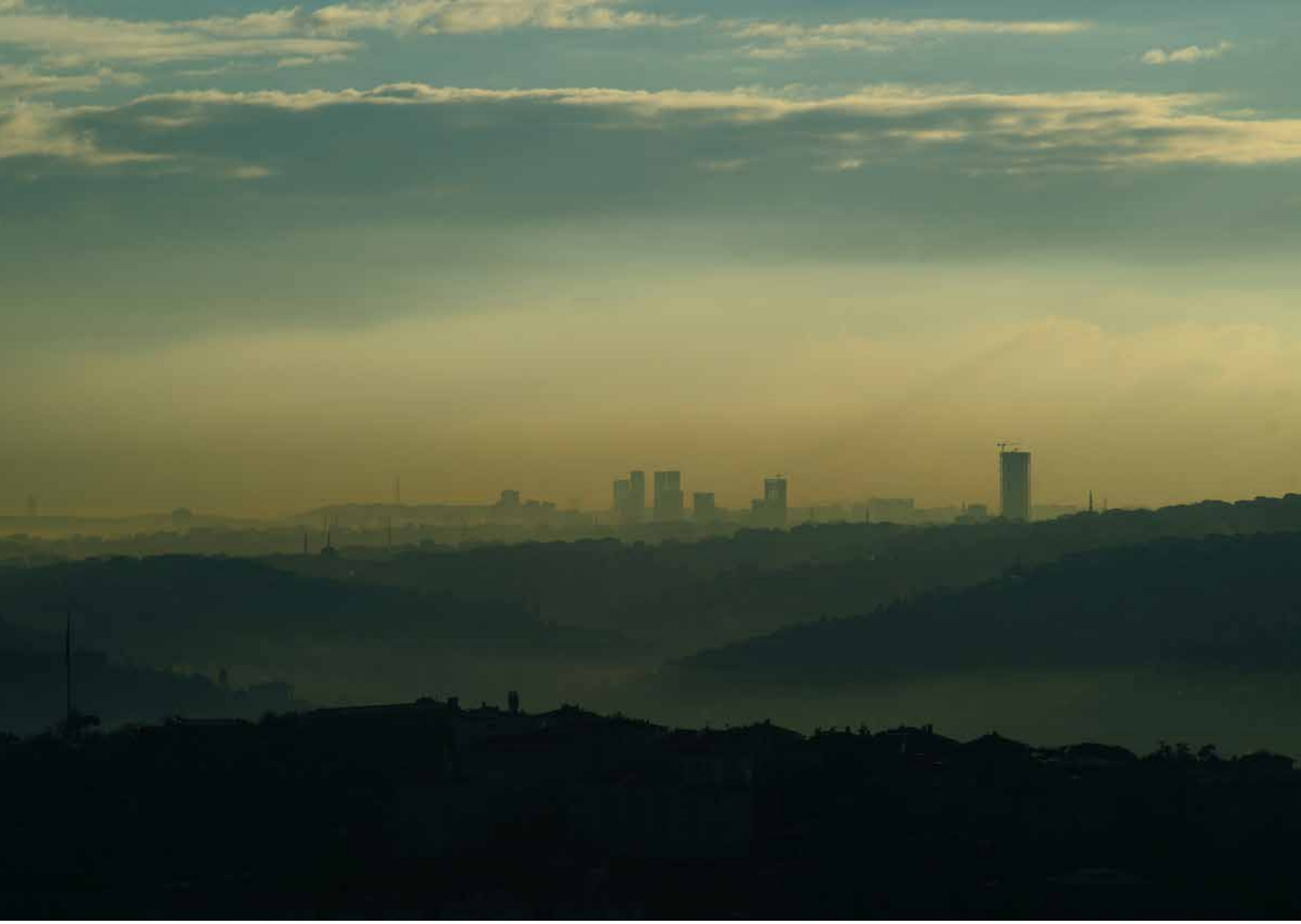
I recently completed a paper on the impact of air pollution on labor supply in Spain (joint with Laura Hospido and Felix Holub). An important finding is that air quality improvements that occurred in Spanish cities between 2005 and 2014 increased labor supply by 5.6 million worker days, because workers took fewer sick leaves. We wanted to quantify this effect because, although air quality has been improving a lot in the developed world, labor productivity has been growing even faster, so that foregone production should no longer be ignored in cost-benefit analysis of pollution regulation. An enjoyable aspect of this research was that it required us to think very hard about how behavior – such as absenteeism and presenteeism – interacts with health outcomes. Since the existing literature focuses on severe health outcomes, where behavior is less relevant, it didn´t provide much guidance on this.

An important finding is that air quality improvements that occurred in Spanish cities between 2005 and 2014 increased labor supply by 5.6 million worker days, because workers took fewer sick leaves

I also keep pursuing my research agenda on the EU ETS. Currently, I am working on improving the research infrastructure for econometric policy evaluation by building an international research network on Environmental Performance and Regulation of Enterprises in Europe (EPREE). As part of my ERC project, I am also working on quantifying the co-pollution benefits of emissions trading.

**Building on insight from your research on carbon leakage, do you envision carbon leakage concerns increasing in the future, as the world continually becomes more connected?**

Empirical research has thus far not produced compelling evidence of widespread carbon leakage. This is not surprising because we haven´t seen many serious carbon pricing schemes outside of Europe, and because carbon prices in Europe have been very low. Both these things have begun to change, however, so that I think the concerns about carbon leakage are more justified today than they were



yesterday. How much investment leakage we will end up seeing depends in no small part on the policy responses to those developments.

**Thinking mostly about your applied work, do you have any specific strategies to keep up to date with the advances in the econometrics/statistics literature?**

That´s a very relevant question, given that most of the time I have for reading papers is consumed by reviewing, editing, and advising activities. One strategy to keep abreast with the research frontier is to attend seminars in applied economic research, broadly defined. In addition, I benefit a lot from attending the environmental economics reading group at Mannheim.

One strategy to keep abreast with the research frontier is to attend seminars in applied economic research, broadly defined. In addition, I benefit a lot from attending the environmental economics reading group at Mannheim.

**Some of your recent projects require working within interdisciplinary teams. What do you think are the main challenges and opportunities in those settings?**

The main opportunity is to draw on expertise outside of economics in order to represent the trade-offs more accurately and hence derive better solutions. A challenge is that there isn´t very much experience and institutional knowledge around that would help us run an interdisciplinary team. It falls upon our generation of environmental economists to change this, and I´m optimistic that we can do it ·