

TSE Energy and Climate Forum

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HIGHLIGHTS



Toulouse
School
of Economics

Energy &
Climate Center

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TSE Energy and Climate Forum

THE RENEWABLE ENERGY CHALLENGE



Organised in collaboration with CCI France Belgium with the overwhelming participation of over 80 stakeholders, this forum served as a platform to bring together researchers and key industrial actors, who exchanged views on the major issues of renewable energy development and the impact of their integration into the energy market.



TSE researchers *Stefan Ambec* and *Stefan Lamb* presented their research projects followed by a round table on: “*The challenges of the penetration of renewables in the energy mix*” moderated by Simon François, RTL Belgium.

Stefan Ambec



Stefan Lamb



The panel consisted of **Tom Van de Cruys**, (VP, Total Gas & Power); **Christian Gollier** (Director, TSE); **Jean-Pierre Hansen** (Advisor, Engie) and **Jacques Merley**, (Head of the Downstream Division in the Group Strategy Department, EDF).

The opinions of the round-table participants on the future of the energy mix were both diverse and convergent. Christian Gollier, TSE Director, initially acknowledged that the energy transition would be costly, but that the Pigouvian principle of a carbon tax is fairer than the existing environmental policies: the implicit carbon cost of the latter is at the level of €1,300 per tonne of CO₂, well above the level of around €50 per tonne of CO₂ proposed by the French government.

Tom Van de Cruys presented Total's vision, explaining that Total already calculates investments using a carbon price, and that the company has been evolving over the past few years from a pure oil tanker to a “gas, oil and electricity company”. VP Total Gas & Power explained that this change will come mainly from large groups that have the ability to make the necessary investments. The company is now investing in



energy storage facilities and in a demand-side management system. To respond to the intermittency of renewable energies, it is a strong predictor of the growth of gas in the energy mix.

On EDF's side, Jacques Merley questioned the social sustainability of a strategy relying only on a "carbon price signal to end user", explaining that parts of the population do not all have the same redeployment possibilities, and that this would have an income effect depending on its price elasticity. Christian Gollier refuted this point, explaining that this inelasticity only exists in the short term, and that individuals adapt in the medium and long term. The Head of the Downstream Division in the Group Strategy Department advocated a strategy mixing market carbon pricing and regulations made consistent through shadow value of carbon. He was also confident in the low-carbon energy vector produced by EDF, chose to talk more about solutions in mobility or housing, such as electric buses or house insulation. This point also interested Jean-Pierre Hansen, who questioned the investment delays in energy saving in buildings. The latter, as an advisor at Engie, shared three ideas from the forum and the round table: that uncertainties are still present and renewable technologies also carry them, that integrating them into the energy mix will be costly, and that it will be imperative to diversify your electricity fleet. Jean-Pierre Hansen explained that the guiding principle will rather come from policies, because markets are not able to give these price signals and do not have the opportunity to do so when policies "crop the wings" of the industry. He concludes that it is necessary to diversify its energy mix but in a flexible way, taking the United Kingdom as an example.

The degree of interventionism on the part of the state in the choice of the energy mix was a central theme of this round table. Tom Van de Cruys (Total) pointed out the uncertainty even in the related roles of the state and industry, so Jean-Pierre Hansen (Engie) and Jacques Merley (EDF) agreed on the importance of consistency in the process, stressing that it is often difficult and rare to give market forces the freedom to act naturally. Jean-Pierre Hansen, in response to a question from the public, explained that this is one of the reasons why liberalisation in Belgium in the 1990s was disappointing, advocating the use of other methods, such as market auctions.

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The round table concluded with a question about Europe's role in decarbonising the world, in a context where environmental policy decisions are not necessarily aligned. After presenting the divergent strategies between nations, Christian Gollier raised the idea of climate coalitions with an import tax on carbon for other countries. EDF and Total speakers concluded by indicating that it would be easier to promote low carbon solutions by stressing their advantages in regards to outcomes in health and pollution.

"Change will come mainly from large groups that have the ability to make the necessary investments"

