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# A novel news-based index of environmental and climate policy uncertainty

Joëlle Noailly, Head of Research, CIES, Geneva Graduate Institute

Laura Nowzohour, PhD Candidate in International Economics and CIES Affiliated Researcher, Geneva Graduate Institute

Matthias van den Heuvel, PhD Candidate, EPFL and CIES Visiting Researcher, Geneva Graduate Institute

The politics of environmental and climate policy are particularly volatile, as illustrated by the sudden energy crisis dampening Europe's appetite for climate policy action. This column introduces a novel high-frequency news-based index of US environmental and climate policy uncertainty over the 1990-2019 period and documents the adverse effects of policy uncertainty on low-carbon investments.

In the midst of the current European energy crisis, several countries have recently backpedaled on coal phase-outs and shale gas moratoriums and started to massively subsidize the costs of oil and gas energy. These announcements represent an abrupt change of course from current energy policies pledging to reduce emissions to achieve the 2015 Paris Agreement on Climate Change, thereby leading to increased policy uncertainty about future climate action.

Yet, a predictable regulatory framework is key to mobilize investments and financial flows for the low-carbon economy. A survey from the European Investment Bank shows that 43 percent of European firms and 22 percent of US firms cite uncertainty about regulation as an important barrier to undertaking climate-related investment (EIB, 2021). To date, however, the absence of quantitative measure of environmental policy uncertainty has made it difficult to

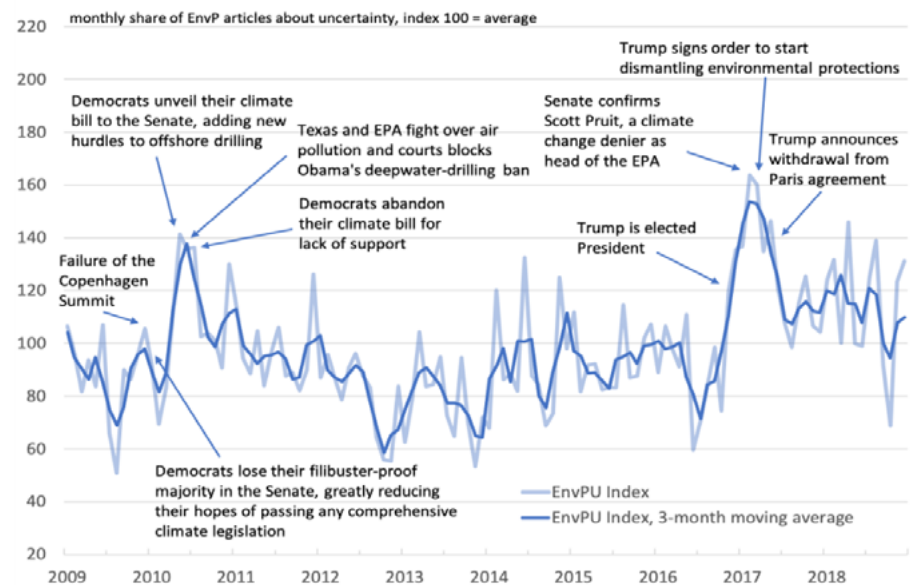


Fig. 1 The EnvPU index, period 2009-2019

assess empirically the adverse effects of these regulatory risks on climate-related investments.

### The Environmental and Climate Policy Uncertainty Index

In Noailly, Nowzohour and van den Heuvel (2022), we introduce a novel news-based index of US environmental and climate policy uncertainty: the EnvPU index. The index is available on a monthly basis from January 1990 to March 2019 and can be accessed freely at [www.financingcleantech.com/envpu-index](http://www.financingcleantech.com/envpu-index).

The EnvPU index captures the monthly share of news articles relating to uncertainty about environmental and climate policy, among ten US newspapers spread across the country. The index is scaled by the total volume of environmental policy news, so that it remains unaffected by fluctuating media attention on general environmental issues. On top of the novel focus on environmental regulations, our methodology improves on previous news-based policy indices (Baker et al., 2016; Caldara et al., 2020) by relying on supervised machine learning algorithms to classify news articles rather than less sophisticated keyword-based methods.

Our novel index provides insights into the following question: What induces perceptions of increased uncertainty about environmental and climate regulations in the US context? The detailed reading of news articles shows that a variety of factors play a role, namely: (i) unpredictable outcomes of the legislative process, (ii) legal challenges of regulations awaiting court decisions, (iii) unexpected revisions or rollbacks of policies, or (iv) the failure of international environmental negotiations due to a lack of political will and supportive coalitions.

Many of these events are illustrated in Figure 1, which displays the evolution of the EnvPU index over the 2009-2019 period. Spikes in the index correspond to well-known historical episodes. The early 2010s are punctuated by several bursts of policy uncertainty: driven by the introduction and eventual failure of a comprehensive climate bill aiming to introduce a nationwide cap-and-trade system, the EnvPU index rose to 40 percent above its average level during the summer of 2010. Around the same period, the failure of the COP15 in Copenhagen created an additional burst in policy uncertainty.

Finally, the EnvPU index surged to record-high levels (60 percent above its average) during the early months of Trump's presidency in 2017, reflecting the great degree of uncertainty about how far the Trump administration would rollback existing Federal environmental regulations.

## Environmental policy uncertainty and low-carbon investments

We then study the relationship between environmental policy uncertainty and low-carbon investments. When investors have a hard time foreseeing the future evolution of the regulatory framework, they may either delay their investments until there is more clarity or invest in safer alternatives. Such a mechanism is likely to be particularly detrimental to investments in low-carbon markets, as these highly rely on public policies to be profitable.

Our firm-level results confirm that environmental policy uncertainty has adverse effects on funding for cleantech startups. Using quarterly data on venture capital funding for 35,000 US startups from the Crunchbase database over the last twenty years, we find that an increase in our EnvPU index is associated with a lower probability for cleantech startups to receive funding in the following quarter (controlling for environmental policy stringency, GDP growth, the oil price and market risk). This effect is particularly concentrated among clean-energy startups characterized by capital-intensive and irreversible investments.

We also find that higher environmental policy uncertainty raises the volatility of stock returns of green firms, as measured by their annual green revenues shares. Using monthly data on stock returns of 438 listed US firms from January 2008 to March 2018, we find that there is a positive association between a shock to our EnvPU index and the contemporaneous within-firm stock volatility of green firms, compared to other firms. This might reflect higher perceived market risk by investors, potentially dampening investments in green firms.

## Conclusions

The historical evolution of the US EnvPU index shows that environmental and climate policies are rarely predictable and consistent over time, as illustrated again by the recent European energy policy turnarounds. Yet, our results imply that elevated levels of environmental policy uncertainty threaten the establishment of robust markets for the low-carbon economy, further delaying urgent climate action.

## References

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**CENTRE FOR INTERNATIONAL ENVIRONMENTAL STUDIES**  
GRADUATE INSTITUTE OF INTERNATIONAL AND DEVELOPMENT STUDIES  
Case postale 1672, 1211 Genève 1  
T +41 22 908 44 61  
[cies@graduateinstitute.ch](mailto:cies@graduateinstitute.ch)