

For students, much of the excitement of attending the COP as part of a country's delegation comes from the opportunity to sit in multi-party negotiations. But when nearly the entire second week in Paris turned into bilateral negotiations, a break from the crazy schedule of article-focused meetings gave us a chance to explore the multitude of side events hosted by delegations, NGOs, and private industry. Hashing out the specifics of the text is of course important, but with INDCs guiding the actual implementation of emissions reductions and adaptation measures, it was at these side events where the most interesting information was shared. It's an incredible experience as a student to not only be surrounded by experts from around the world but also to have the opportunity to interact with them one-on-one. These events are a unique supplement to in-classroom learning in that they're often hosted by those creating the laws and policies we learn about or by those reacting to policies in the private sector.

One area of particular interest to me was the intersection of energy policy and developing countries. In negotiating rooms, this and related issues were often tabled as being too "cross-cutting" and thus inappropriately addressed only in terms of mitigation, or loss and damage, or any other single article topic. Indeed, one of the struggles of the negotiations came from states unable to discuss the agreement as a whole, because topics were initially siloed. Side events, by contrast, allow for crosscutting issues to be examined as a whole and are the best place for students to make connections between policy strategies and projects already being implemented.



The Indian Pavilion was a big hit, offering digital and interactive content and a waterfall that spelled out words.

In terms of energy policy, the need for technology innovation was, and has been, a very

common refrain. Priorities include cheaper renewables, energy storage, and creative ways to increase energy efficiency. These are exciting issues here in California as we look to implement progressive new legislation and develop a robust distributive grid, but framing these same conversations in the context of a developing country can create another opportunity for optimism. India provides one example that garnered a lot of attention. As one of the world's largest emitters of greenhouse gases, India recently made several promising announcements, including a plan for an installed solar power capacity of 100GW by 2022. At the same time, though, India announced four new coal plants, a reminder of the long-term carbon challenge presented by coal in India. According to a recent study by the University of East Anglia and Stanford University, India's emissions have grown as much as the EU's emissions have fallen in the past year, essentially cancelling out progress made by the EU. With this context, it's easy to blame developing countries for their dirty emissions, but more optimistically one can look at developing countries as an opportunity to develop infrastructure and policy that promote clean energy from the start, learning from the mistakes made by others. India is proactively focused on financing new technologies as it expands its grid and electrifies its economy, and its INDC is largely contingent on external financial support. The US and other countries can provide India and other developing countries with this support, but, just as importantly, jurisdictions with successful programs and policies can also provide support through information sharing. California is doing just that. It sent a large delegation to the COP to meet with other subnational jurisdictions and countries to discuss their regulations and policies.

At a press briefing, U.S. Energy Secretary Ernest Moniz spoke about the "extremely intense" conversations that took place between India and the United States over the last months, indicating that India was a key mover for the launch of a new R&D program, *Mission Innovation*. Secretary Moniz suggested that without a large developing nation like India signing on, the program would not be successful. This program, launched by several countries, intends to double government R&D investment over a five-year period. It is also linked to *Breakthrough Energy Coalition*, the private sector initiative with similar increased investment goals, and in which the UC System is a participant. Secretary Moniz believes the outcome of *Mission Innovation* will be a dramatic increase in international collaboration. It was only one of a multitude of partnerships and programs announced at COP21. Some of the most exciting include several more signatories to the Under 2 MOU, as well as Manitoba's MOU to link with Quebec and California in their cap-and-trade program.

*Mission Innovation*, though a public sector project, takes cues from much of the discussion surrounding COP about the need to create a strong signal to the private sector that investing in clean technology is a smart move. This was a theme at several side events,

including one hosted by a variety of Indian think tanks and businesses. Though side events can sometimes be an opportunity for self-congratulation, “the India story” side-event, named so by the organizers, did give much reason for the optimism stated above. Speakers discussed a variety of state-led incentives created to spur industry towards renewables and energy efficiency. States have Renewable Purchase Obligations for distribution companies that are intended to drive the demand for solar. Renewable Energy Credits (RECs) are used and being perfected in India to alleviate the burden on states that lack the same renewable energy potential as others. India is working on a scheduling system to allow renewable generation to more efficiently be scheduled into the grid, with a sharpened eye towards storage to alleviate intermittency problems with renewables. And these efforts build on good history: In 1982, India began the Department of Nonconventional Energy Resources, the first of its kind in the world to focus solely on alternative forms of energy.

To be fair, many of these programs often fall short of their goals. But they have created an atmosphere of innovation, in which companies are taking their own initiative with both renewables and energy efficiency programs. For example, there are currently over 400 companies in the distributed or decentralized energy sector working to bring electricity, usually through solar, to rural areas that the grid does not yet reach. Additionally, the India GHG Program was launched in July 2013 and now covers businesses emitting 15 to 25 percent of India’s total emissions. This private sector initiative aims to create a standardized measurement approach across various industries and to provide assistance in training and capacity building for emissions reductions. Its key driver is connecting emissions reductions to improved operational efficiency, a concept that makes good business sense.

While we often hear about energy efficiency strategies (demand-side approach) and the integration of renewables (supply-side approach), improving operational efficiency through a combination of the two was frequently discussed by speakers at side events. These speakers included Secretary Moniz, the panelists from the India story event, and Dr. Brian Vad Matheisen of Smart Energy Systems. As Dr. Vad Matheisen points out, there are known technologies to transfer heat byproducts from energy production to other uses, such as home heating. In his presentation he highlighted the need to incorporate an analysis of thermal needs and transportation into discussions of energy efficiency. Companies in India are already implementing this technology. One presenter mentioned a company utilizing over 300 such heat-recovery projects and seeing a short 2-year payback period on its investments. The Indian panelists emphasized that regardless of the outcome of the COP, businesses benefit by spreading technology to increase efficiency, something that has already happened in the manufacturing industry in India. They anticipate and are seeing the same flow of technology happening in both the energy sector and other sectors seeking to

increase energy efficiency.

India faces many of the same struggles as other developing countries, but is in the unique position where 70% of its buildings are yet to be built. As India builds its economy and infrastructure, it has the opportunity to electrify its economy in cleaner ways. These examples of industry-led programs are far from an exhaustive list of initiatives and collaborations happening, but provide a glimpse of a hopeful story from the side of industry in a developing country. And for me as a student, the story allowed me to engage with familiar material in a different, real-world context, a hugely satisfying opportunity in my legal education.