



# BEYOND 2015: AN INNOVATION-BASED FRAMEWORK FOR GLOBAL CLIMATE POLICY



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**Executive Summary**



CENTER FOR CLEAN  
ENERGY INNOVATION

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## EXECUTIVE SUMMARY

The world faces two contradictory energy challenges: mitigating climate change and expanding affordable energy access in low-income countries. Unfortunately, prevailing climate policies, including carbon caps and pricing, regulatory mandates, and subsidies to deploy existing high-cost technologies, have failed to effectively address either challenge. As a result, fossil fuel consumption continues to increase, and clean energy, while growing slowly in market share, remains a higher-priced, luxury good incapable of cost-effectively replacing fossil fuel energy.

International climate negotiations, set to conclude in Paris in 2015, are focused on how to integrate countries' past individual actions into a cohesive global agreement, but most of the policy proposals on the table mirror the unsuccessful approaches of the past 20 years. Rather than continuing down the same path, the 2015 negotiations offer an opportunity to craft a fundamentally new approach to decarbonizing the global energy market that prioritizes innovation to make clean energy cheaper than fossil fuels without subsidies. This will enable energy consumers in high-income nations to voluntarily switch to clean energy for economic reasons and consumers in low-income nations to more easily afford clean energy to address energy poverty. Most importantly, it offers the best opportunity to rapidly transition to a global clean energy economy.

Achieving this goal requires the international climate community to support a new framework for clean energy innovation policy based on the following principles:

- The paramount goal of climate policy should be to make the unsubsidized cost of clean energy cheaper than fossil fuels so that all countries deploy clean energy because it makes economic sense.
- Innovation of cheaper technologies, and not just deployment of existing high-priced technologies, is the fundamental way to achieve clean energy affordability.
- Countries have differentiated policy responsibilities in achieving this goal, depending on their level of development.
- Robust government support, including significant investment for clean energy research, development, and demonstration (RD&D), is necessary to make energy technologies cheaper than fossil fuels.
- Climate policy should provide emerging clean energy technologies niche market support to overcome inherent market barriers to commercialization through the use of smart innovation-driven deployment policies.
- Efforts to create large, global clean energy markets require strong policies that provide adequate incentives and intellectual property protection for companies and entrepreneurs developing clean energy innovations.
- Unfair clean energy market competition, including internationally sanctioned compulsory licensing, limits innovation.

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- Climate policy should not force low-income countries to pay more for clean energy to provide much-needed energy access in the name of carbon mitigation.

The current approach to global climate policy is based on the notion that we can overcome climate change if all nations reduce carbon emissions by subsidizing the adoption of existing clean energy technologies. International climate negotiations principally aim to do so by getting all countries to commit to carbon reduction targets, even though such efforts have previously failed to curb emission growth. The principal approach advocated at the national level is to make dirty energy more expensive than clean energy through carbon caps or taxes, which have been met with political resistance to higher energy prices and have limited impacts without innovation.

International institutions, like the World Bank, have sought to support modest clean energy adoption in developing nations by funding energy efficiency and renewable energy projects with no eye toward spurring innovation. And many emerging countries have primarily focused on competitively unfair green mercantilist policies, including discriminatory procurement and compulsory licensing, to build domestic industries—limiting global clean energy innovation in the process.

With the lion's share of national and international climate policy efforts focused on ways to prop up today's expensive technologies, there has been a declining interest in developing more competitive, next-generation clean energy. Overemphasis on targets, pricing, and deployment has left few resources to support a dedicated innovation strategy, including clean energy RD&D. Indeed, the world underinvests in clean energy RD&D by roughly \$70 billion a year, which amounts to only 13 percent of what the world spends on global fossil fuel subsidies and 27.5 percent of what it invests in clean energy deployment.

It is time to fundamentally reform existing international climate policies by orienting them more toward driving innovation and the development of clean energy technologies that stand a chance of displacing fossil fuels without the support of regulation and subsidies. This report proposes a set of policy reforms to turn today's limited climate approaches into high-impact clean energy innovation policies that give the world a fighting chance at addressing global climate change. When nations meet in Paris in 2015, negotiators should work to create a framework that allows and encourages nations to do the following:

- Instead of being presented with a “take it or leave it” option of signing on to an international agreement to limit carbon emissions, high-income and emerging countries should have the option to participate by committing to investing in clean energy RD&D at an agreed-upon share of GDP.
- High-income countries should adopt “revenue-raising” policies to support clean energy innovation, including implementing a modest carbon tax, increasing oil and gas drilling fees, and eliminating wasteful fossil fuel subsidies and use a portion of these revenues to support clean energy RD&D.
- Instead of simply subsidizing the deployment of existing, high cost clean energy technologies, high-income countries should implement “smart” subsidies that are contingent upon technology cost reduction and performance increases so that they support new technologies through commercial scale-up.
- The UN, the World Bank, and climate financing mechanisms like the Clean Technology Fund should redesign their investment portfolios to limit funding for deployment of existing clean

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technologies and energy efficiency projects, and instead prioritize supporting transformational energy technologies with financing for large-scale demonstration and smart deployment projects.

- Although low-income countries often lack the resources and infrastructure to support early stage R&D, they should collaborate with high-income countries and international institutions, like the International Energy Agency, to support the testing and demonstration of next-generation technologies in instances where it may be more affordable than fossil fuels. Engaging low-income countries as “test beds” for advanced energy technologies strengthens the global energy innovation ecosystem while increasing energy access in energy-poor nations.
- In absence of unilateral action by mercantilist countries to limit green mercantilist policies, including tariffs, forced localization, discriminatory government procurement and compulsory licensing, high-income countries and international organizations should work cooperatively to limit these policies.
- International institutions, including the World Bank and the UN, should exclude compulsory licensing in future international climate agreements and immediately stop supporting energy projects that include compulsory licensing of domestic content requirements.
- The UN should redefine “modern energy access” to the equivalent of what high-income countries benefit from today, sending a signal that much more effort and innovation is needed to advance solutions for global energy poverty.

In short, the world needs to give up the limited approaches of the previous decades and adopt innovation-based solutions as quickly as possible. These proposed policies offer a new start in global climate policy for the long term, with the recognition that climate change is a technology problem requiring solutions that advance low-carbon technology options. With time running out, it is now or never to get serious about implementing an aggressive clean energy innovation policy.