



## What's Cooking? A Brief Update

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Extensive world press coverage attended the speech by US Secretary of State Hillary Clinton on September 21, 2010 announcing the Global Alliance for Clean Cookstoves. The Alliance, which is coordinated through the United Nations Foundation (UNF), is a unique and innovative combination of founding partner organizations that signed up to the goal of providing 100 million clean cookstoves by 2020. Its objective is to reduce the significant health and other impacts of current use of household biomass fuels in the world's poorest households. As of the launch, some US\$60 million had been committed to the Alliance of the \$250 million goal. Those that contributed at least \$250,000 are indicated below by an asterisk (\*) as founding funders. About 90% of the commitment came in the form of applied research funding from US government agencies, most prominently the National Institutes of Health\*, Department of Energy\*, Environmental Protection Agency\*, the Department of State\*, and Centers of Disease Control\*. A number of UN agencies were founding partners, including WHO, UN-Energy, UNEP, WFP, UNIDO, and UNHCR; as well as the bilateral aid agencies of Germany\*, Norway\* and the US\*. Two European technical assistance groups, GTZ\* (Germany) and SNV\* (Netherlands) also participated, along with the charitable foundations of two major companies—Shell Oil\* and Morgan Stanley\*—and of course UNF\* itself. One of the half dozen national cookstove programs currently active was also a founding partner, that of Peru. In addition, the Alliance is inviting additional interested governments, as well as implementing organizations in the public, private, and non-profit sectors to become (non-founding) partners (<http://cleancookstoves.org/the-alliance/partnership-opportunities/>).

The range of activities that the Alliance will undertake to support its goal has not yet been worked out in detail, but initial indications in public announcements and press interviews with principals indicate that the primary focus will be to support the development of a robust global stove industry and market through standard setting, technical exchange, lobbying for reductions in tariffs and duties, and potentially concessionary loans and other financial incentives. The premise is that the private sector provides a well-tested means to achieve sustainable production and dissemination of household appliances, including gas and electric cookstoves, in the long term. The unproven hypothesis, however, is that there are biomass stoves (a) that are clean enough to have major benefits to health and climate compared to traditional practices and (b) that are affordable by the population at risk, the world's poorest half, so that sales can be sustained. With an affordability limit of about \$10, no such device is available today, although research and development continue. Sales of more expensive devices, of course, are likely to reach mostly the relatively well-to-do households, not the poorest and most vulnerable.<sup>1</sup>

The promotion and sales of centrally manufactured advanced biomass cookstoves by companies based in the US, India, and the Netherlands provide evidence that the private sector can make a difference. Two of these companies (First Energy in India, and Philips-India) produce blower semi-gasifier stoves with excellent performance, i.e., particle emissions per meal in simulated settings reliably well below 10% of those of open fires. The first, however, requires biomass pellets and thus is restricted to people able to buy fuel and the second is priced at ~\$80, i.e., well above what the poor can afford

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<sup>1</sup> The Alliance focuses more on the cookstoves themselves rather than on improved fuels which are another way of achieving clean cooking (Goldemberg et al., 2004).

through direct sales. There are also a number of clean semi-gasifier stoves manufactured and sold regionally in China, but at prices well above \$50. Unlike those in India, however, they always include chimneys, giving higher reliability to reduction of health-damaging air pollution exposures.

Another nascent initiative, the Global Cookstove Accelerator Facility (CAF), is working toward development of a mechanism to make it easier for cookstove programs to tap funds through the Clean Development Mechanism, the official carbon market created by the Kyoto Protocol on climate change, or the voluntary carbon market using Gold Standard ([www.cdmgoldstandard.org/](http://www.cdmgoldstandard.org/)). Although there are a few successful examples of cookstove carbon projects, they are slow to be implemented in spite of their large development cobenefits (health, women's time, etc.) due to a combination of somewhat difficult to use protocols and the need for substantial up-front financing. Taking cues from the new Global Methane Initiative announced October 1, 2010 (<http://www.globalmethane.org/gmi/>), the CAF is exploring a range of options to help this happen, including guaranteeing a price floor on future carbon credits and low interest loans. These would reduce the cost and risk of developing a cookstove project using carbon financing. Since cookstove carbon projects typically return much of the carbon revenue to the households through covering part or all of the cost of the stove, being able to tap the carbon market at large scale would in principle offer a way to put more advanced and truly clean stoves into the kitchens of even the poorest households (<http://impactcarbon.org/>).

The idea that improving the combustion efficiency of biomass cookstoves potentially provides significant climate as well as health and energy benefits seems to have been first published in ESD, in its inaugural volume (Smith, 1994). It is attractive as a “win-win” mechanism to shift resources from the first world, which has emitted most of the excess warming pollutants in the atmosphere, to the third world, where important cobenefits for health can be achieved among many of the same populations that are most vulnerable to climate change. It does not mean, however, that fixing cookstoves will have an important impact on long-term climate change. This would have the flavor of blaming the victim and is far from the case. It is power plants, SUVs, and other major greenhouse-gas emitters in all countries that must be addressed to do that. The argument is rather that if significant resources are to be devoted to mitigating climate change, then why not spend them first on projects where significant cobenefits accrue, particularly to the poor?

As reported in ESD (Venkataraman et al., 2010), the Government of India (GoI) last year announced a National Biomass Cookstove Initiative (NCI), with several innovative components that impact global cookstove efforts. The NCI is uniquely framed among all stove programs in the world, today or historically, by explicitly aiming to provide every household in the country combustion comparable to LPG in cleanliness and efficiency, whether from modern fuels or biomass. Its designers also describe any climate benefits as “icing on the cake,” which may be thick or thin, depending for example whether the black and other particles

from cookstoves are as important for warming as some climate models indicate. The NCI is explicitly “after the cake,” however, meaning the health and social benefits, although the climate “icing” may make the cake more salable in some quarters. Like the Alliance, the NCI is focusing on promotion of markets where possible, but also has significant efforts planned to explore ways to directly reach the most vulnerable groups at large scale through the health and rural housing sectors, among others (<http://web.iitd.ac.in/~nbc/>).

To push the technological development needed to provide such clean biomass stoves for its NCI, the GoI has recently announced an agreement with the X-Prize Foundation for a Global Innovation Prize for clean cookstove technology. As of this writing, the exact criteria and procedures by which the technology will be judged have not been announced, but will certainly include ambitious requirements for low emissions and long lifetime. The number of categories and purse sizes has also not been decided, but it is expected that to garner the desired global attention, one prize needs to be at least \$1 million. This approach is being taken not only to bring global publicity to the issue, but also to attract the attention of the major combustion labs in the world, perhaps even those usually serving the automotive and aircraft industries, in order to focus the best possible scientific and engineering talent on this important technical problem. These R&D groups may not have understood previously the scale of the impacts created by poor combustion in developing-country households. The contest offers a way that they can apply their expertise to have a major beneficial impact and thus gain publicity and perhaps participate in the stove market as well as win the prize money. Previously, such global technology innovation prizes have leveraged research worth at least 10 times more than the prizes themselves, an excellent investment of funds. (<http://www.xprize.org/media-center/press-release/x-prize-govt-of-india-iit-delhi-announce-partnership-to-create-global-com.>)

Keep watch in these pages for updates on these and other major initiatives related to cookstoves, including developments in the national programs around the world. This will include advances in understanding of how to monitor programs in order to promote actual usage of the stoves, an important but sometimes neglected aspect. Signs are that due to actions from a number of quarters, we are experiencing a major global cookstove renaissance after well more than a decade of relative inattention in most countries and international agencies.

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