

SUMMARY

Testimony for House of Representatives Committee on Energy and Commerce By Elisa Derby, Senior Program Officer, Winrock International, September 11, 2012

Winrock International is a nonprofit organization that works with people in the United States and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources. I am here today to discuss Winrock's partnership with the U.S. Environmental Protection Agency related to clean, efficient cooking practices.

Some three billion people worldwide burn solid fuels (wood, animal dung, crop residues, charcoal and coal) for cooking and heating, in open fires or rudimentary stoves, which has serious negative health, environmental and socio-economic impacts. Nearly 2 million people, primarily women and children in low and lower-middle income countries die prematurely each year from exposure to indoor smoke from burning solid fuels; more than from either AIDS or malaria. Time and money spent on gathering and buying fuel perpetuates the cycle of family poverty. The inefficient burning of wood and charcoal also increases pressures on local natural resources, and contributes to emissions of greenhouse gases and black carbon.

Winrock, the U.S. Environmental Protection Agency (EPA) and a host of national, international and private sector partners have advanced low cost improved cooking technologies to address these problems since 2002 under the Partnership for Clean Indoor Air, launched as a Presidential Initiative of George W. Bush and led by EPA, and now through ongoing work of the Global Alliance for Clean Cookstoves, EPA, and other USG agencies.

Winrock takes seriously our important role as stewards of U.S. taxpayer dollars. As such we are firmly committed to cost-effective and efficient use of funds, and always require significant participant cost-sharing for all funded travel. Participants that receive airfare support are responsible for their own meals, lodging, incidentals, visa costs, ground transportation and all other travel costs, and of course, their time. The overwhelming majority of the grant funding that Winrock has received from EPA for this Partnership has been spent for American coordinators and Fly America Act-compliant airfares, with the remainder spent on direct costs for trainings—at no time have any funds been transferred to any foreign governments or other foreign entities.

Winrock's current EPA grant-funded activities include technical training workshops, study tours and technical webinars. Through these activities Winrock strives to develop, disseminate and apply best practices in the manufacturing, sale and marketing of improved stoves, including quality control and effective end user training and maintenance. Ultimately, these efforts will lead to reduced maternal and child exposure to indoor smoke for millions of families.

Recognized as a global leader and expert in indoor air quality, EPA's involvement has lent important prestige to the improved cookstove sector and has enabled tremendous accomplishments and growth and development of the sector over the past 8 years. EPA funding since 2002 for clean and efficient cookstoves has been pioneering and vital to the sector, and we have been proud to play a role in these achievements.

**Submitted testimony of Elisabeth Derby
Senior Program Officer, Winrock International
House of Representatives Committee on Energy and Commerce
September 11, 2011**

Chairman Whitfield, Representative Waxman, distinguished members of the committee, thank you for inviting me here today. My name is Elisa Derby. I am a Senior Program Officer at Winrock International, and I manage Winrock's household energy programs. Winrock International is a nonprofit organization that works with people in the United States and around the world to empower the disadvantaged, increase economic opportunity, and sustain natural resources. Winrock's headquarters is Little Rock, Arkansas, the state of our namesake, former Governor and rancher Winthrop Rockefeller.

I am pleased to be here today to discuss Winrock's partnership with the U.S. Environmental Protection Agency related to clean, efficient cooking practices. I will summarize my testimony for you today to maximize time for your questions; my complete testimony has been submitted for the record. I hope this testimony helps Committee members to understand the work we have done and the people it has benefited.

Around three billion people worldwide burn solid fuels – including wood, animal dung, crop residues, charcoal and coal – for cooking and heating, in open fires or rudimentary stoves, which has serious negative health, environmental and socio-economic impacts. Burning solid fuels results in the release of dangerous particulate matter (PM), carbon monoxide (CO) and other toxic pollutants into the air. The World Health Organization estimates that nearly 2 million people, primarily women and children in low and lower-middle income countries, die prematurely each year from exposure to indoor smoke from burning solid fuels. As a

comparison, AIDS caused an estimated 1.8 million deaths in 2010¹ and malaria caused an estimated 655,000 deaths that same year². Pneumonia, closely associated with exposure to indoor air pollution, is the number one killer of children under five worldwide, and the WHO estimates that half of all pneumonia deaths in children are due to particulate matter inhaled from solid fuel smoke.³

In addition to acute respiratory infections like pneumonia, other health outcomes associated with exposure to indoor air pollution include chronic obstructive pulmonary disease (COPD), such as chronic bronchitis; lung cancer (for users of open coal stoves); cataracts; tuberculosis; nasopharyngeal and laryngeal cancers; cardiovascular disease; asthma attacks; adverse pregnancy outcomes (stillbirth, low birth weight); and early infant death⁴. Additional health impacts from collecting and burning solid fuels include burns and scalds; eye irritation and infections; headaches; backaches from tending fires on the floor; and injuries and assaults incurred during fuel collection, which can include back and neck injuries from carrying heavy loads of fuel, snake and insect bites, attacks and rape. Because household energy tends to be considered the domain of women, and by association their children, women and children disproportionately suffer from these impacts; they are the ones spending long hours in smoke-filled kitchens near open flames, and usually the ones collecting fuel, sometime spending hours per day doing so.

¹ http://www.unaids.org/en/media/unaids/contentassets/documents/unaidspublication/2011/JC2216_WorldAIDS_day_report_2011_en.pdf

² <http://www.who.int/mediacentre/factsheets/fs094/en/>

³ <http://www.who.int/mediacentre/factsheets/fs292/en/index.html>

⁴ Smith, K.R. Indoor air pollution in developing countries: recommendations for research. *Indoor Air* 2002; 12: 198–207: <http://www.ncbi.nlm.nih.gov/pubmed/12244750>

While women may associate indoor smoke with coughing and eye irritation during the cooking period, many are unaware of the longer term health impacts. In communities in which the vast majority of cooks are exposed to high levels of indoor air pollution over a lifetime, women may see cataracts as just something everyone gets eventually, and pneumonia as a common and perhaps unpreventable childhood illness.

Time and money spent on gathering and buying fuel limit options for school attendance for children, and other more productive income-generating opportunities for women. This perpetuates the cycle of family poverty. While I am not expert on this issue, we know there are direct links between international poverty and U.S. national security. Women who cook with solid fuels may also lose time spent sick or injured, or caring for sick or injured children as a result of health effects of traditional cooking activities.

The inefficient burning of wood and charcoal for cooking and heating increases pressures on local natural resources, and can exacerbate deforestation. In addition to greenhouse gas emissions, primarily of carbon dioxide and methane, traditional cooking and heating methods are a major source of black carbon, an important short-lived climate forcer.

In short, the simple task of cooking family meals has serious negative health and socioeconomic implications for half of the world's population, and serious negative environmental impacts locally, regionally and globally.

Fortunately, there are clear solutions to these problems. Winrock, the U.S. Environmental Protection Agency and a host of national, international and private sector partners are advancing low cost technologies for the world's poorest and most vulnerable people. Properly designed

improved cookstoves can reduce indoor air pollution levels by 70-95%, and can reduce fuelwood use by 50% or more. Improved cook stoves address at least 5 of the 8 United Nations' Millennium Development Goals: End poverty and hunger; Gender equality; Child health; Maternal health; and Environmental sustainability.

I personally have witnessed the damaging health and safety effects of indoor air pollution and open fires on women first hand in homes I've visited in Latin America and Asia, and the impact that a clean, efficient cookstove can have on their lives. Women have shared with me the improvements in their health and their children's health that they have experienced following their adoption of an improved cookstove. They talk about coughing less, no longer experiencing burning eyes and throats while cooking, and their children staying healthier. They note that they have more time to spend with their children and money for food and school as a result of the reduced fuel needs of improved stoves. They love how much cleaner their kitchens are; their old stoves coated the walls and ceiling with soot, which they were horrified to realize was then also coating their lungs, and the lungs of their children. In Peru, where Winrock implemented a USAID-funded improved cookstoves program, families have been so proud of their improved stoves that they have whitewashed the walls, and painted their stoves with beautiful designs.

Under the leadership of President George W. Bush, the United States launched a Clean Energy Initiative (CEI) at the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002. The mission of this initiative has been to bring together governments, international organizations, industry and civil society in partnerships to alleviate poverty and spur economic growth in the developing world by expanding access to and modernizing energy services. This Presidential Initiative consists of four market-oriented, performance-based partnerships including

the partnership I'll be speaking about today; the Partnership for Clean Indoor Air, led by the U.S. Environmental Protection Agency, which Winrock co-coordinated from 2003 to earlier this year.

Winrock is committed to reducing the adverse impacts of household cooking and heating through solutions that are participatory, technology-neutral and efficient, culturally responsive, technically and economically feasible, commercial, replicable, and scalable.

Winrock has been proud to work with the U.S. EPA in this effort. EPA has been a leader in facilitating global dialogue, capacity-building, and action to increase the positive impact of household energy interventions, reducing death and disease among women and children due to indoor smoke exposure in developing countries.

As a recognized global leader and expert in indoor air quality, EPA's involvement has lent important prestige to the improved cookstove sector that has enabled tremendous accomplishments and growth and development of the sector over the past 8 years. This would not have been possible without their involvement. EPA has been uniquely able to attract and harness the specific strengths of different entities to share their expertise, and to build a more effective effort to reach millions more people with healthier stoves. Given its public sector base, EPA has been able to focus on high impact and low cost training activities while remaining technology neutral; not promoting any specific improved stove brands or models, but rather working to make all types of stoves better and more efficient.

Through EPA, the US government has come to play a very important role in the international playing field of the cookstoves sector. U.S. leadership in this field reaps important dividends on both macro and micro levels. On the macro level, the U.S. has become an internationally

recognized leader in this area, and is sought after for consultation by other countries. On the micro level, the daily interactions of field workers changing lives person by person and family by family serve as ambassadors of good will for the American people.

Through April of this year, Winrock co-coordinated the Partnership for Clean Indoor Air (PCIA) with the EPA. PCIA was a global community of 590 nonprofits, governments, research organizations, individuals and businesses (including 128 U.S.-based groups) working to reduce solid fuel use for cooking, exposure to indoor air pollution and the resulting health risks I mentioned earlier. As part of its role in PCIA, Winrock:

- Supported more than 24 technical training workshops with hundreds of participants on various technical topics including improved design, testing, commercialization, and indoor air pollution monitoring. For example, last fall I helped train 24 participants from 19 different improved stove manufacturers and stove promoters in Bangladesh how to test and improve their stoves⁵. They learned stove testing protocols, tested their stoves, made design improvements to the stoves, and tested them again to measure the effects of the changes on their stove performance.
- Published 30 technical thematic quarterly Bulletins distributed to over 2,400 direct recipients, and provided support to technical webinars;
- Co-organized an International Standards Organization (ISO) International Workshop on Clean and Efficient Cookstoves to develop an international workshop agreement that now serves as an interim global standard to improved cookstove efficiency, emissions, indoor emissions and safety;

⁵ http://www.pciaonline.org/proceedings/2011_Bangladesh_Aprovecho_Workshop

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- Co-organized four international biennial Forums that brought together hundreds of the world's leading household energy and health experts (with the 2011 Forum bringing together 350 people from 40 countries, including technical experts from U.S. universities, non-profits and private industry); and
- Monitored Partner achievements annually and analyzed results of global stove sales, testing and other key indicators, the reports from which serve as the only centralized source of this information worldwide. **Cumulatively over the six years of monitoring, PCIA Partners reported selling and distributing more than 9.3 million improved stoves, benefiting approximately 52 million people.**

Winrock's work with PCIA has benefited American companies, nonprofit organizations, and citizens. The 128 U.S.-based partners (see full list attached) who benefit from PCIA's work include universities, multilateral organizations, NGOs, private industry, and independent consultants. Many of these U.S.-based groups have benefited from both direct technical training and merit and need-based airfare scholarships to attend important workshops, meetings and events.

Winrock takes seriously our important role as stewards of US taxpayer dollars. As such we are firmly committed to cost-effective and efficient use of funds, and always require significant participant cost-sharing for all funded travel. Participants that receive airfare support are responsible for their own meals, lodging, incidentals, visa costs, ground transportation and all other travel costs, and of course, their time. Winrock used the technical expertise provided by EPA to leverage an additional \$340,000 in external travel support from other donors. The overwhelming majority of the grant funding that Winrock received from EPA for this

Partnership was spent for American coordinators and Fly America Act-compliant airfares, with the remainder spent on direct costs for the trainings—at no time have any funds been transferred to any foreign governments or other foreign entities.

The U.S. government’s support and leadership in this sector has increased global awareness of household energy and health challenges and solutions and has resulted in much greater private sector involvement.

Building on the past 8 years of work of the Partnership for Clean Indoor Air, in 2010 the United Nations Foundation launched the Global Alliance for Clean Cookstoves. This new public-private partnership will continue to save lives, empower women, improve livelihoods, and combat climate change by creating a thriving global market for clean and efficient household cooking solutions. The Global Alliance ‘100 by 20’ goal calls for 100 million homes to adopt clean and efficient stoves and fuels by 2020. The Global Alliance will work with public, private, and non-profit partners to help overcome the market barriers that currently impede the production, deployment, and use of clean cookstoves in the developing world.

PCIA has now officially integrated into the Alliance, and going forward Winrock’s EPA-funded cookstoves work will concentrate on technical training. The Global Alliance will carry the torch of communications, convening the sector players, advocacy, fund raising, and awareness raising. U.S. government support for the improved cookstoves sector comprises complementary and non-redundant roles filled by EPA, DOE, USAID, State Department, NIH, CDC and the Global Alliance, all of which are carefully coordinated by an inter-agency cookstoves committee.

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Winrock's current post-PCIA activities funded by an EPA grant include technical training workshops, study tours and technical webinars. Through these activities Winrock is working to develop, disseminate and apply best practices in the manufacturing, sale and marketing of improved stoves, including quality control and effective end user training and maintenance. Ultimately, these efforts will lead to more people using better technologies and practices correctly, reducing their exposure to indoor smoke.

We believe that the work U.S. EPA has funded to date related to clean and efficient cookstoves has been pioneering and vital to the sector, and we have been proud to play a role in these achievements. I appreciate the opportunity to make this presentation and am happy to answer any questions you may have.

Partnership for Clean Indoor Air Partners Based in the United States

AHEAD Energy [Marietta, OH- Non-Governmental Organization]

Aid Africa [La Crescenta, CA- Non-Governmental Organization]

Alpha Renewable Energy Pvt. Ltd [Atlanta, GA- Private Industry]

Aprovecho Research Center [Cottage Grove, OR- Non-Governmental Organization]

Baylor University [Waco, TX- Academia]

Berkeley Air Monitoring Group [Berkeley, CA- Private Industry]

BioLite Stove [Berkeley, CA- Private Industry]

Biomass Energy Foundation (BEF) [Normal, IL- Non-Governmental Organization]

Biomass Energy Resource Center [Montpelier, VT- Non-Governmental Organization]

Bunge [Miami, FL- Other Organization Type]

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Bureau of Applied Research in Anthropology, University of Arizona [Tucson, AZ- Academia]

Burn Design Lab [Vashon, WA- Non-Governmental Organization]

California Sunlight Corporation [Sacramento, CA- Private Industry]

Center for Air Resources Engineering and Science at Clarkson University [Potsdam, NY- Academia]

Centers for Disease Control and Prevention [Atlanta, GA- Government]

CHF International [Silver Spring, MD- Non-Governmental Organization]

Chip Energy [Goodfield, IL- Private Industry]

Clean Compassion [Bonney Lake, WA- Non-Governmental Organization]

ClimatePath [Moraga, CA- Independent Consultant]

Colorado State University Engines and Energy Conversion Laboratory (EECL) [Fort Collins, CO- Academia]

Columbia Univeristy - Biomass Working Group [New York, NY- Academia]

Consulting for Health, Air, Nature, & a Greener Environment, LLC (CHANGE) [Queensbury, NY- Private Industry]

D.&E. Green Enterprises, Inc. [New York, NY- Private Industry]

Desert Research Institute [Reno, NV- Academia]

E+Co [Bloomfield, NJ- Non-Governmental Organization]

EarthMatters LLC [Washington, DC- Private Industry]

East-West Center [Honolulu, HI- Non-Governmental Organization]

ECOFuel Worldwide Inc. [Boynton Beach, FL- Private Industry]

ECOLIFE Foundation [Escondido, CA- Non-Governmental Organization]

ECOLOTECH [Dreyfus, KY- Independent Consultant]

EcoZoom [Portland, OR- Private Industry]

EgyDev [Washington, DC- Independent Consultant]

Energy Links Project of the Center for Financial Inclusion at ACCION Intl [Washington, DC- Non-Governmental Organization]

Energy Transportation Group [New York, NY- Private Industry]

Eneron Inc [Palo Alto, CA- Academia]

Engineers in Technical and Humanitarian Opportunities of Service (ETHOS) [Ames, IA- Non-Governmental Organization]

Engineers Without Borders - USA [Boulder, CO- Non-Governmental Organization]

EnterpriseWorks/VITA - A Division of Relief International (RI/EWV) [Washington, DC- Non-Governmental Organization]

Envirofit International [Fort Collins, CO- Non-Governmental Organization]

Excel Systems [Boulder, CO- Non-Governmental Organization]

Fabretto Children's Foundation [Arlington, VA- Non-Governmental Organization]

Friendly Appropriate Solar Technologies [Los Altos, CA- Non-Governmental Organization]

Frontier Markets [New York, NY- Private Industry]

Gadgil Lab - Stoves [Berkeley, CA- Academia]

Global Village Power, LLC [Fort Collins, CO- Carbon Project Developer]

GlobalResolve at Arizona State University [Mesa, AZ- Academia]

Green Empowerment [Portland, OR- Non-Governmental Organization]

GreenMicrofinance [Phoenixville, PA- Private Industry]

Haiti Reconstruction [Burnsville, MN- Non-Governmental Organization]

Health Effects Institute [Boston, MA- Non-Governmental Organization]

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HELPS International [Farmersville, TX- Non-Governmental Organization]

Hugh McLaughlin, PE [Groton, MA- Independent Consultant]

iENERGY Inc. [Norfolk, VA- Private Industry]

Impact Carbon [San Francisco, CA- Carbon Project Developer]

International Institute for Ecological Agriculture [Santa Cruz, CA- Other Organization Type]

International Lifeline Fund [Washington, DC- Non-Governmental Organization]

International Relief and Development [Arlington, VA- Non-Governmental Organization]

Iowa State University- Thermal Systems Virtual Engineering Group [Ames, IA- Academia]

Jet City StoveWorks [Seattle, WA- Non-Governmental Organization]

JSI Research & Training Institute, Inc. [Boston, MA- Non-Governmental Organization]

Larson Consulting [Golden, CO- Independent Consultant]

Las Vidas Mejoradas [Springfield, OR- Non-Governmental Organization]

Legacy Foundation [Ashland, OR- Non-Governmental Organization]

Magnastar Inc. [New York, NY- Private Industry]

Michigan Technological University [Houghton, MI- Academia]

Micro Enterprise Solar Harvest [Lakewood, CA- Non-Governmental Organization]

National Institute of Environmental Health Sciences [Research Triangle Park, NC- Government]

NSF International [Ann Arbor, MI- Other Organization Type]

Pamoja Inc [Chester, VT- Non-Governmental Organization]

Peace Corps [Washington, DC- Government]

Pennsylvania State University [State College, PA- Academia]

People for Guatemala [Naples, FL- Non-Governmental Organization]

Population Services International [Washington, DC- Non-Governmental Organization]

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Potential Energy [Berkeley, CA- Non-Governmental Organization]

Project Gaia, Inc. [Gettysburg, PA- Independent Consultant]

Project Surya [La Jolla, CA- Academia]

Proyecto Mirador [Kentfield, CA- Non-Governmental Organization]

Public-Private Alliance Foundation [Hastings on Hudson, NY- Non-Governmental Organization]

Rotary Club of Fresno [Fresno, CA- Non-Governmental Organization]

RTI International [Research Triangle Park, NC- Non-Governmental Organization]

San Diego State University [San Diego, CA- Academia]

SeaChar (AKA The Seattle Biochar Working Group) [Seattle, WA- Non-Governmental Organization]

Sierra Club [Washington, DC- Non-Governmental Organization]

SilverCeramicSystems.com [Wellsville, NY- Other Organization Type]

Small World Carbon [Cheyenne, WY- Carbon Project Developer]

Social Marketplace [San Francisco, CA- Other Organization Type]

Soil Control Lab [Watsonville, CA- Private Industry]

Solar Cookers International [Sacramento, CA- Non-Governmental Organization]

Solar Cookers World Network [Stockton, CA- Other Organization Type]

Solar Household Energy, Inc. (SHE) [Chevy Chase, MD- Non-Governmental Organization]

Stokes Consulting Group for Dometic AB [Gettysburg, PA- Independent Consultant]

StoveTeam International [Eugene, OR- Non-Governmental Organization]

StoveTec [Eugene, OR- Private Industry]

Sun Ovens International [Elburn, IL- Private Industry]

SunSmile [San Francisco, CA- Non-Governmental Organization]

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Sustainable Harvest International [Surry, ME- Non-Governmental Organization]

T R Miles, Technical Consultants Inc. [Portland, OR- Private Industry]

Tassajara Technologies [Emeryville, CA- Private Industry]

The Charcoal Project [Brooklyn, NY- Independent Consultant]

The International Collaborative for Science, Education, and the Environment, Inc. [Cambridge, MA- Non-Governmental Organization]

The Modi Lab and Earth Institute, Columbia University [New York, NY- Academia]

The Paradigm Project, L3C [Monument, CO- Carbon Project Developer]

TIST [Washington, DC- Non-Governmental Organization]

Trees, Water & People [Fort Collins, CO- Non-Governmental Organization]

United Nations Development Programme [New York, NY- Multilateral]

United Nations Foundation [Washington, DC- Non-Governmental Organization]

United States Agency for International Development (USAID) [Washington, DC- Government]

United States Department of Health and Human Services, HRSA Center for Quality [Rockville, MD- Government]

United States Department of State [Washington, DC- Government]

United States Environmental Protection Agency (USEPA) [Washington, DC- Government]

University of California, Berkeley - Renewable and Appropriate Energy Laboratory (RAEL) [Berkeley, CA- Academia]

University of California, San Francisco [San Francisco, CA- Academia]

University of Chicago Global Health Initiative [Chicago, IL- Academia]

University of Cincinnati [Cincinnati, OH- Academia]

University of Colorado [Boulder, CO- Academia]

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University of Dayton - ETHOS Program [Dayton, OH- Academia]

University of Georgia [Athens, GA- Academia]

University of Illinois at Urbana-Champaign [Urbana, IL- Academia]

University of Mary Washington Honduras IAP Initiative [Fredericksburg, VA- Academia]

University of Washington [Seattle, WA- Academia]

Up Energy Group, Inc. [San Francisco, CA- Private Industry]

USCAM Corporation [Saint Cloud, MN- Private Industry]

Winrock International [Arlington, VA- Non-Governmental Organization]

Women's Commission for Refugee Women and Children [New York, NY- Non-Governmental Organization]

World Bank [Washington, DC- Multilateral]

World Lung Foundation [New York, NY- Non-Governmental Organization]

World Wildlife Fund [Washington, DC- Non-Governmental Organization]

WorldStove [Gloucester, MA- Private Industry]