

Harvard Team Wins \$200,000 World Bank Competition to Light Up Africa Using 'Dirt-powered' Microbial Fuel Cells - 10 May 2008 - www.lebone.org



ACCRA, GHANA: Lebonê (la - bow - nay) Solutions, a collaboration between African Harvard undergraduates and university scientists, have been named winners in the World Bank's Lighting Africa Competition to develop low-cost innovative technologies to light up Africa. Lebonê's victory earns them \$200,000 to roll out their microbial fuel cell (MFC)-based lighting systems in sub-Saharan Africa.

According to the World Bank, only 26% of Africa's population has access to electricity. For the rest, lighting comes from kerosene lamps and candles. Not only are these lamps dangerous, but as fossil fuel prices soar, households are spending as much as 10-15 percent of their income on light. The World Bank competition sought innovative lighting technologies to address this burgeoning need.

Most renewable energy technologies are based on solar or wind power, but Lebonê's proposal bucked the trend: their LED light source is powered by microbial fuel cells. Pioneered in the developing world by Harvard biology professor Peter Girguis, Lebonê's MFCs capture energy produced by naturally occurring microbial metabolism, and can generate electricity from organic-rich materials such as soil, manure or food scraps. Unlike solar and wind power, MFCs generate electricity day or night, rain or shine. So Lebonê's energy is both reliable and 'dirt cheap.'

The awards were announced in Accra, Ghana as part of the 2008 World Bank IFC Lighting Africa Development Marketplace Competition. The international competition received entries from over 400 organizations. Fifty-two finalists were invited to Accra for interviews and presentations before the judges announced the 16 winners on May 7th. The competition is central part of an initiative aimed at mobilizing the private sector to provide modern off-grid lighting to over 250 million people in Sub-Saharan Africa by 2030.

Together with funding from Harvard's Initiative for Global Health, Lebonê will use the winnings to conduct its first field study in the foothills of Kilimanjaro, Tanzania starting in July. Next fall, the team will test and distribute refined prototypes in Namibia in collaboration with Namibia Connection Youth Network.

The Lebonê group met as Harvard undergraduates in Professor David Edwards' Engineering Sciences course: Idea Translation. In this course students are tasked with learning through collaborative experience, overcoming the personal barriers that separate them from their goals and the institutional barriers that separate industry, academia, culture, and society. All of the members of the group either have personal roots or a deep interest in Africa.

The Team:

Hugo Van Vuuren, Founder & Managing Partner. Born and raised in South Africa, Hugo graduated from Harvard with a degree in Economics. He works with the Idea Translation Lab at the Harvard School of Engineering and Applied Sciences and focuses on building the partnerships and financing aspects of Lebônê.

Stephen Lwendo, Founder & Program Partner. Stephen from Tanzania studies Engineering and Computer Science at Harvard. He has worked extensively on educational ventures in Tanzania, and is directing our pilot study there.

David Sengeh, Founder & Technology Partner. David, who is from Sierra Leone, studies Engineering at Harvard. He is working on the technology design aspects of Lebônê and develops our technological partnerships.

Zoë Sachs-Arellano, Founder & Program Partner. Zoë graduated from Harvard with a degree in Philosophy in 2007. She has co-founded the Namibia Connection Youth Network incubating teams of change agents in Namibia. She is working on the African program development aspects of Lebônê.

Aviva Presser, Founder & Technology Partner. Aviva is a PhD student at Harvard SEAS and MIT Biology and Managing Fellow of the Idea Translation Lab. Her nonprofit work as founder of Bears Without Borders is the subject of a bestselling novella by Jennifer Archer. She works on the technology and program development aspects of Lebônê.

Alexander Fabry. Alexander is studying History of Science and Physics at Harvard and is working on the technology integration development, fundraising, and grant application aspects of Lebônê.

Advisers and Partners:

Paul Bottino, Esq., co-founder of the Harvard Technology and Entrepreneurship Center and the Idea Translation Lab at Harvard and Medicine in Need Corporation.

David Edwards. Professor of Biomedical Engineering at Harvard. He has founded several companies, including Pulmatrix and Advanced Inhalation Research (AIR), the Idea Translation Lab, and a non-profit, MEND.

Peter Girguis. Professor of Biology at Harvard. Pioneer of microbial fuel cell technology and founder of Living Power Systems.

Richard Kirk. Founder of the multi-million dollar company Elumin8 (www.elumin8.com) and Polyphotonics.

The Harvard Idea Translation Laboratory at the School of Engineering and Applied Sciences

About Lebônê Solutions:

Lebônê Solutions, Inc. is a social enterprise developing off-grid energy delivery and lighting technologies. The mission of Lebônê is to end the energy and lighting crisis in Africa by adapting emerging technologies for the African market, and delivering the resulting devices to the rural villages where they are needed most.

Lebônê (pronounced la - bow - nay) means “lightstick” in a dialect of North Sotho spoken in the central parts of South Africa.

For more information on Lebônê, please visit www.lebone.org or contact Hugo Van Vuuren at hugo@seas.harvard.edu + 1 857 928 6482