

em[PWER] Energy Group, Inc.

*Transforming Communities  
Through Renewable Energy From Waste Solutions*

# Portfolio

[www.empowerenergygroup.org](http://www.empowerenergygroup.org)

**Table of Contents**

**Who We Are: An Overview.....1**

**Our Team .....3**

**Focus on: Community Development .....7**

**How YOU Can Help! .....10**

**Financial Profile .....12**

**Supplementary Materials**

**em[POWER] External Newsletter V1E1**

**2011 Promotional Calendar**

# Who We Are: An Overview

## Our Mission and Vision

em[POWER] is a 501(c)3-pending non-profit organization that seeks to revitalize landfill communities throughout the world using a modular and scalable cooperative development model based on renewable resources. By coordinating and streamlining the waste sorting process of landfill scavengers, the em[POWER] model will improve the sorting efficiency of recyclables, turn organic waste into electricity and high quality compost, and provide the nucleus for a host of community-owned businesses. This will in turn provide community access to electricity, enhance educational opportunities, improve local health, and raise worker wages, while reducing greenhouse gas emissions and waste overflow. By having a series of autonomous co-op units around the world, em[POWER], as an umbrella organization can help them access markets which require scale for entry. Our overarching vision is to convert a form of poverty into a mechanism that can be used by a community to improve their living conditions and allow them to make a positive contribution to society.

## The Problem

The last century witnessed an unprecedented explosion in world population, rising from approximately 1.6 billion people in 1900 to 6.8 billion people in 2010. This has led to the emergence of urban slums, which face a wide range of difficult challenges due to their unique set of circumstances. The intersection of excessive population density with the lack of necessary infrastructure leads to extreme waste production that has nowhere to go but giant landfills at the fringes of the city limits. Impoverished people, looking to make a living, resort to scavenging in these sites for recyclable materials such as metals, plastics, and glass, which can be sold to wholesalers. For both the global environment and the scavengers who live and work in these sites, there are a number of serious problems that the em[POWER] model seeks to address.

## Our Solution

By partnering with local high-impact and influential individuals and organizations, em[POWER] will teach these waste scavengers how to improve their quality of life. Many of our initiatives focus around alternative uses for organic waste, thus allowing the community to capture revenue from this currently-wasted resource. For example, inexpensive bio-digester technology can convert organic content into methane fuel that can power a generator while reducing greenhouse gas emissions. This electricity can be used to power essential community facilities such as schools and health clinics, thus enabling the development of community-owned businesses and income-generating activities that will provide additional services and revenue for the community.

## Pilot Project: Bangladesh

The Matuail Landfill in Dhaka, Bangladesh is the largest dumping site for Dhaka, a city of 14 million inhabitants that produces 3200-3500 tons of garbage every day. 1200 of these tons make their way to Matuail each day but a community of almost 10,000 households also call Matuail *home*. As in hundreds of other waste-scavenging communities around the world, Matuail's inhabitants generate income through low-margin scavenging in the mountains of garbage. Often, piles of trash are first burned to eliminate the organic waste content such as food, wood, or paper. Not only are these practices dangerous, but they are also inefficient and environmentally damaging.

As the phrase 'one man's trash is another man's treasure' implies, what we call 'waste' actually tends to hold great value when utilized properly. The first step towards collecting this lost wealth in Matuail is to work with local NGO's as we teach the community how to separate out the organic waste and turn it into compost that can be sold or used for local agriculture. The process will be continuously scaled-up until we can install a small-scale bio-digester to produce methane fuel, thus powering a generator and electrical infrastructure for the community.

Ultimately, we are driven by community development. We are conducting surveys to help us accurately and comprehensively identify Matuail's greatest needs and priorities. The generated electricity will allow the school to expand its capacity to include more students, provide vocational training to adults, and power computers. In the meantime, we are running fundraisers to raise much-needed supplies for its students. Electricity can also be used by local health clinics to improve their services and preserve temperature-sensitive medications or by community members to develop micro-enterprises that will give them the tools, opportunities, and confidence that they need to participate and succeed in society.

## Our Team

em[POWER] has a diverse, multi-talented, and committed team from all around the world that includes technical, engineering and business expertise. With its main headquarters in the US, its operations are primarily run from the state of New Jersey. Internationally, em[POWER] is committed to creating and cultivating its local, on-ground presence and sees these partnerships as an essential factor in em[POWER]ing these communities to take charge and effect positive change on their own societies.



# Our Team

## We are...

... a group of individuals concerned about what happens to a population that is forced to pick through landfills to find food, shelter, and a source of livelihood.

... a group of individuals who refuse to believe that realities cannot change.

... a group of individuals from around the world trying to bring alternative energy, education, and improved sanitation to a community in need.

## Our Executive Board:

**Ryan Integlia**

Executive Director

**Faaez Ul Haq**

Deputy Executive Director

**Tiffany Tong**

President

**Nasir Uddin**

Vice President

**Sho Ohata**

Vice President

**Dalia Nahol**

Executive Secretary

**Henry Chao**

Directory of Information  
Technology

**Hira Haque**

Treasurer

**Daive Integlia**

Chief Health Officer

## Our Strategic Personnel:

**Sejan Bari**

Onsite Outreach  
Coordinator: Project  
Bangladesh

**Tessa Mauer**

Project Mexico Coordinator

**David Pal**

Project Cambodia  
Coordinator

**K. M. Maksud**

Project Bangladesh Onsite  
Advisor/partner

**Emily Sessoms**

Project Brazil Coordinator

**Edyta Kuciapa**

Graphic Designer

## Our Advisors:

### **Gordon Bloom**

Dean's Visiting Professor of Entrepreneurship,  
Keller Center for Innovation in Engineering  
Education, Princeton University, NJ

### **Candace Chandra**

Lecturer in Public and International Affairs,  
Woodrow Wilson School; Owner and  
President of Canary Strategies LCC

### **Nurullah Hajra**

Special Advisor for Project Bangladesh

### **Phymean Noun**

Executive Director, People's Improvement  
Organization; 2008 CNN Hero of the Year;  
Advisor for Project Cambodia

### **Eric Lam**

Professor to the School of Environmental  
and Biological Sciences, Rutgers University, NJ

### **AJ Both**

Advisor to the Rutgers Student Chapter

### **Frank Felder**

Director, Center for Energy, Economic &  
Environmental Policy, Rutgers University, NJ

### **Matt Matsuda**

Advisor to the Rutgers Student Chapter

### **Brian Trelstad**

Chief Investment Officer of the Acumen Fund

## Our Global Affiliates and Strategic Partners:

### **D.Net**

(Dhaka, Bangladesh)

### **GramBangla Unnayan Committee**

(Dhaka, Bangladesh)

### **People's Improvement Organization**

(Phnom Penh, Cambodia)

### **Warm Heart Worldwide**

(Highland Park, NJ)

### **Engineers Without Borders**

(Rutgers Student Chapter, NJ)

### **Insight Access**

(Mexico)

### **Rutgers EcoComplex**

(Rutgers, NJ)

## Selected Team Member Profiles:



**Ryan Integlia** | Executive Director | [integlia@empowerenergygroup.org](mailto:integlia@empowerenergygroup.org)

Ryan received his Ph. D. in Electrical and Computer Engineering from Rutgers University, where he studied slow light and superprism effects in the field of Nanophotonics. He previously received a Masters of Science in the subject of Wireless Sensor Networks working with the departments of both Electrical and Civil Engineering. Ryan's industry experience includes work with IBM in the server systems division and Siemens in the RFID and wireless sensor networking group. He is originally from New Jersey and has traveled extensively within and outside the US. Ryan's volunteer efforts have touched on many subjects, such as supporting the well-being of individuals in the local community through soup kitchens, children's hospitals and local schools; social awareness via the media; engineering aid strategies with various non-profits; and others. His idealistic goal for this project is to demonstrate that there is a possibility to change one of the many forms of poverty - that of people living in garbage - into a mechanism that physically transforms the circumstances of life into the means that empowers the enrichment of their lives, rejuvenation of their environment, and the contribution to their society.



**Faaez Ul Haq** | Deputy Executive Director | [fulhaq@empowerenergygroup.org](mailto:fulhaq@empowerenergygroup.org)

Faaez is a computer science major from Pakistan and a Davis Scholar. A resident of Islamabad, he has previously worked on-site in Karachi, organizing contacts and working with the non-profit school and health clinic. Having worked on a One Laptop Per Child project in a small village in Sierra Leone, he also has valuable experience in grassroots community organization. Faaez was also a co-founder of the Social Entrepreneurship Initiative at Princeton.



**Tiffany Tong** | President | [ttong@empowerenergygroup.org](mailto:ttong@empowerenergygroup.org)

Tiffany is a Ph. D. candidate in the Department of Electrical Engineering at Princeton University. Her research interests center around the applications of technology in developing regions, with a focus on solar energy. She is particularly interested in the intersection of technology, policy, and entrepreneurship, and is pursuing a Science, Technology, and Environmental Policy certificate with the Woodrow Wilson School of Public and International Affairs at Princeton University. Tiffany has worked on diverse projects including the development of a solar-powered vaccine transport camel saddle system for rural communities in Ethiopia and Kenya, a survey study on the factors that influence the adoption of solar powered lanterns in Kenya, and an outreach program for refugee youth in conjunction with the International Rescue Committee. She speaks six languages, has traveled to over 35 countries, and enjoys photography, music, and cafe couture in her spare time.



**Nasir Uddin** | Vice President | [nuddin@empowerenergygroup.org](mailto:nuddin@empowerenergygroup.org)

Nasir has graduated Cum Laude from Rutgers University's Biomedical Engineering program. He is going for his Masters in Biomedical Engineering and Business Administration at Rutgers University's MBS Program, while working at a medical device company. His passion for sustainable solutions led him to work closely with *Warm Heart* and *Global Pact* as well. Nasir has been awarded numerous awards for his service, including being named a *National Coca Cola Scholar* in 2006. Within em[POWER], Nasir founded the successful Rutgers University student chapter that led to its being nominated for the *Outstanding New Student Chapter* in 2010. He was also instrumental in starting em[POWER] Project Bangladesh. Being here since the start of the organization, Nasir intends to make em[POWER] a life-time commitment. He sees this organization as having a lot of potential to make a difference in the lives of millions around the world, one landfill at a time. Nasir lives by the philosophy, *"To attain success is to laugh often and much, to win the respect of intelligent people and the affection of children, to appreciate beauty, to find the best in others, to leave the world a bit better, to know even one life has breathed easier because you have lived."*



**Sho Ohata** | Vice President | [sohata@empowerenergygroup.org](mailto:sohata@empowerenergygroup.org)

Sho received his B.S. from Rutgers University in Chemical Engineering and Chemistry. He is fascinated with renewable technology and after getting involved with Engineers Without Borders, he has been compelled by the complex yet remarkable concept of sustainable development and how it takes disciplines ranging from engineering and politics to undertake such a commitment. He also loves to travel, experience new, exotic and exciting things and meet people from different backgrounds.



**Dalia Nahol** | Executive Secretary | [dnahol@empowerenergygroup.org](mailto:dnahol@empowerenergygroup.org)

Dalia is a Sociology major from Oregon pursuing a certificate in Environmental Studies. She has experience in community organizing in Princeton, NJ and neighborhood revitalization projects in her hometown. Dalia is an intern at Princeton University's Office of Sustainability, where she helped establish a bicycle co-op this summer. As Co-Chair in NJPIRG-AmeriCorps Community Water Watch, she coordinated stream monitoring, planned relief efforts in disaster areas, and organized events for community awareness of water issues.

## Focus On: Community Development

### Urbanization: A Growing Problem

The last century witnessed an unprecedented explosion in world population, rising from approximately 1.6 billion people in 1900 to 6.8 billion people in 2010. These numbers will continue to rise, with the vast majority of growth projected to occur in the megacities of the developing world. For the first time, the majority of the world's population lives in urban, rather than rural, environments.

The practical implications of this growth are immense: while wealthy developed nations have been able to finance the necessary infrastructure to accept growing populations, extremely poor nations are rarely in a position to do so. Yet economic opportunities in rural areas are extremely limited and people continue to flock to the slums of the megacities in search of higher wages and access to water, food, and energy supplies. The result will be massive unsustainable growth of impoverished sub-societies evolving in the shadows of expanding megacities.

The intersection of excessive population density with the lack of necessary infrastructure leads to extreme waste production that has nowhere to go but giant landfills at the fringes of the city limits. An increasing number of people have already flocked to these unregulated landfills, which are particularly attractive shelters for the destitute because they provide vast swaths of land that people can scavenge and burn through in search for food and scrap materials to sell. In this dangerous environment, these people often suffer from severe health problems, receive little formal education, are vulnerable to social evils, and live on the margins of society. This is where we come in.

### em[POWER]ment Means: A Right to Energy Access

Blackouts in developing world megacities are common and frequent due to excessive demands on the grid, yet even worse problems face the individuals who live and work in the landfills themselves. Entirely cut off from the grid, the vast majority of landfill shanty towns have no access to electricity, meaning that the basic amenities required for modern life such as lighting, fans, and access to telecommunications are out of reach for millions worldwide. Traditional fuel sources such as kerosene or biomass are frequently the only sources for lighting under these circumstances, but they are costly and their fumes lead to fatal health problems in the confines of shanty life. Without reliable access to electricity, these communities have virtually no chance for real advancement.

em[POWER]'s model of distributed energy generation from organic waste will allow for the electrification of landfill communities, leading to improved standards of living and opportunities for education, health, and economic advancement.

### **em[POWER]ment Means: Health Care**

In order to make scavenging easier, landfill residents frequently burn the trash that enters the landfill in order to eliminate the organic material from the co-mingled recyclables. Yet working in these burning piles of trash often leads to respiratory infections, illness, and frequent burns to hands and feet that can become further infected. Allowing organic material to sit and rot has its own negative health effects, leading to the spread of disease through pathogens. With no access to healthy sources of entertainment, many scavengers resort to drug use in order to escape the drudgery of their work. Nonprofit health clinics seeking to help residents in such communities generally lack electricity access to provide the refrigeration necessary to deliver antibiotics and other life-saving medications.

With the electricity provided by em[POWER], these health clinics will be able to improve their services to save more lives and livelihoods.

### **em[POWER]ment Means: The Right to High Quality Education**

Due to the low wages afforded by scavenging, many children must work alongside their parents rather than attending school. Even many of those that could and would want to attend are prevented from going to school because the local schools are full and underequipped. For the many communities and schools that lack access to electricity, additional hurdles severely hamper educational opportunities. Without electricity, schools in hot climates cannot run fans and computer access is not possible. Furthermore, without lighting at home, students do not have the option of reading and studying after sunset, meaning that their chance to gain a competitive education is seriously handicapped. While problems of school capacity could be solved by offering night classes, this is also not possible without electricity to provide lighting at night.

em[POWER] recognizes the need for a good education to help break the cycle of poverty. Because of this, we have a special commitment to provide the next generation of community members and leaders with the skills they need to succeed through high quality education. While evaluating each location for potential project implementation, we look first and foremost for a school that we can partner with and who can be the first recipient of our electricity generation. Beyond supplying the school with energy, we continue to support this school through efforts to expand and improve the school's facilities and services to better meet the needs of the children and their families in that community.

## em[POWER]ment Means: Opportunities for Economic Advancement

Landfill scavenging is extremely low-margin work. Because scavengers generally operate independently of one another, they are not able to attain the efficiency and economies of scale available to large material recycling facilities in the developed world. Wages on the order of approximately \$2 per day are standard, assuming reasonably good access to wholesale markets. These earnings place scavengers well below the poverty line, and the low skill level of their work relegates them to lives devoid of continuing education and advancement. Furthermore, by burning off the large organic content of landfill waste, scavengers are destroying the economic value of this waste that could be used as a potential energy source for their own communities.

By organizing scavengers into a centralized sorting process that can increase the efficiency of their recyclables sorting, capture the organic waste for methane production, and create a co-op of related community-owned businesses, the em[POWER] model will fundamentally alter the way that such communities operate and provide new avenues for economic advancement.

## Fundraising and Awareness Campaigns

em[POWER] is a 501(c)3-pending non-profit organization based in New Jersey, USA. In order to support our project and fund our ongoing efforts to work with these communities, we must rely on the generous donations of our supporters. We also feel a duty to raise awareness in our own communities about the conditions of these landfill communities all over the world. Previous fundraising and awareness-raising campaigns have included art exhibits, medical and school supply drives, and calendar sales.

If you would like to make a contribution or have ideas for fundraising events or awareness campaigns in your area, please contact us at [fundraising@empowerenergygroup.org](mailto:fundraising@empowerenergygroup.org).



## How YOU Can Help!

### Spread the Word

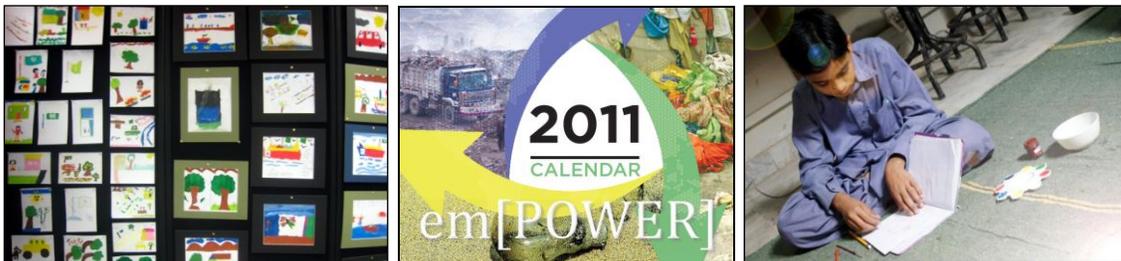
We started out as a grassroots organization composed of students and young professionals and are now a 501(c)3-pending non-profit based in New Jersey (USA). We need your help to raise awareness about the conditions of communities living in landfills around the world; people need to recognize that this is a serious – but curable – issue that will only get worse unless they help us find like-minded individuals who are willing to devote their time and energy towards supporting solutions. So help us bring improved living conditions, enterprise, and dignity to these communities. Help us em[POWER] these landfills and turn wastelands into homelands.

### Financial Contribution: A dollar can go a long way

As you can tell from our grand aspirations, this is not a cheap endeavor. Financial support is essential to run the organization's operations from New Jersey and implement the project at our international project sites. We have already secured some preliminary seed stage funding and are constantly applying to various competitions and investment funds to continue to secure funding for the implementation of the project. Private donations can be made directly through paypal. Furthermore, as a 501(c)3 non-profit organization, monetary donations will be tax deductible.

### 2011 Fundraiser & Awareness Campaign

Our mission is ambitious and may take years to complete. But that doesn't mean that we can't make an immediate impact on these communities in need. We are trying to raise money to buy supplies to help those who have no choice but to pick through trash to make a living. We have organized a traveling art exhibit featuring artwork and media from and inspired by a landfill community in Pakistan, including paintings done by a group of 8-10 year old students. The exhibit first opened on November 19, 2009, at Rutgers University (NJ, USA), and was hosted at Rutgers for a second time on April 26, 2010, as part of a larger event featuring live performances and even our own business plan competition. For more information about how to bring this exhibit to your city, or if you would like to make a donation, please email us for information. We also have 2011 calendars that feature artwork from the exhibit and highlight some of our key accomplishments to date available for a suggested donation of \$10.



## Join Our Team

Donations are not just monetary! Would you like to help us out? If so, consider applying for a position at em[POWER]. We are looking for highly-motivated and proactive individuals who are passionate about solving solutions in the world around them and committed to what they do. This is a great learning experience that allows you to work with like-minded individuals from around the world and come together to form a cohesive plan. The skills you learn here can be taken with you and applied to anything you do in the future.

Our project is multi-faceted and can be broken down into the following sub-sections:

- Organizational (how we manage and streamline our project and improve our networks)
- Financial (how we draw up our financial models and projections)
- Technical (how we implement and set up our waste-to-energy system)
- On-site management (how we interface with the local community and secure local resources)
- Health (how we help treat or prevent the health problems that the community faces)
- Education (how we provide educational resources for children and job training for adults)
- Marketing (how we run awareness and fundraising campaigns)

Official job and internship openings are posted on [idealist.org](http://idealist.org) (keyword search: *em[POWER] Energy Group, Inc.*) or you can email [hr@empowerenergygroup.org](mailto:hr@empowerenergygroup.org) to inquire about additional opportunities at em[POWER].



# Financial Profile

## Growing our Organization

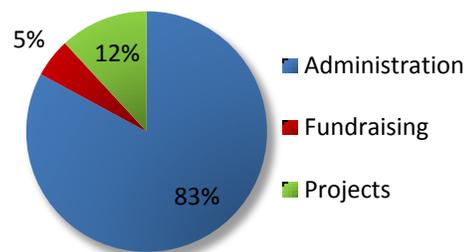
Results don't just come from good intentions and maintaining healthy finances is important if we are to continue making a strong contribution to communities around the world. As a non-profit organization, we rely heavily on charitable donations. Soon, these contributions will be tax-deductible, allowing for a clear win-win situation for everyone. In addition to the private solicitation of funds, we are also actively entering various business plan competitions and pursuing grant opportunities and corporate sponsorships. We have also planned dedicated fundraisers and supply drives. Finally, we operate on a triple bottom line and our project focuses very heavily on sustainability, whether environmental, technical, or economic; we are therefore supporting endeavors at our project sites - ranging from the creation of small businesses or the generation of materials such as compost or recyclables - that will generate revenue and benefit both local community members and our organization as a whole.

## 2010 Financial Summary

In 2010, our Business Development Team won three business plan competitions within one month. This provided us with \$16,000 of seed funding that we have successfully used to jump-start our organization's growth. With this money, we have been able to register for non-profit and 501(c)3 status, visit our project sites, send members to professional growth workshops, and more. We have seen our organization take off with unprecedented speed.

**Table 1: Breakdown of 2010 Expenses**

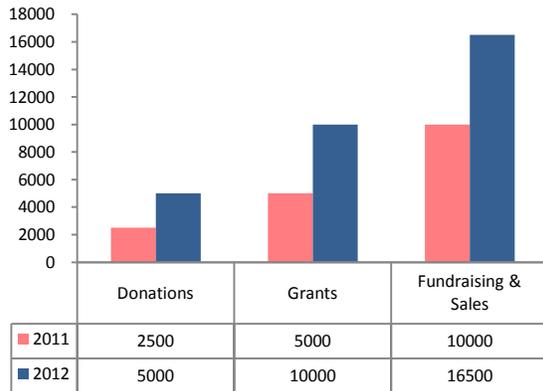
Administration	\$1,830.39
Fundraising	\$115.45
Projects	\$262.04
<b>Total</b>	<b>\$2,207.88</b>



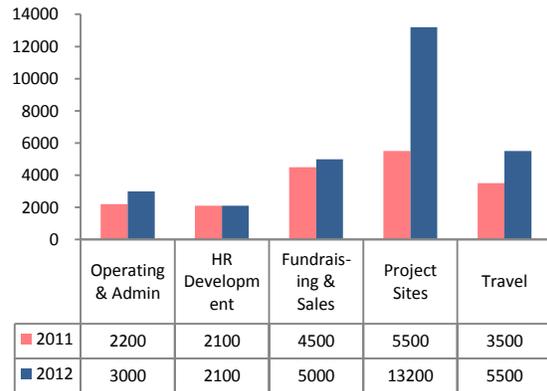
## 2011-12 Financial Projections

In the next two years, we are anticipating many new and exciting project milestones. These changes are similarly reflected in our financial projections for the 2011 and 2012 fiscal years. For example, once we formally receive non-profit status our fundraising efforts will be ramped up and we hope to increase the amount of private contributions that we receive. The funds that we raise in the first two quarters of 2011 should allow us to begin Phase I of Project Bangladesh by the summer. This pilot project will help us establish proof of concept such that in 2012, we can seek greater investor funding, shift into Phase II in Bangladesh, and begin Stage I work at a second project site.

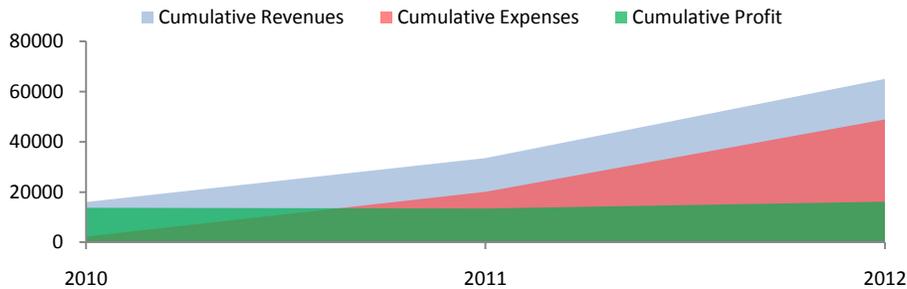
**2011-12 Projected Revenues (USD)**



**2011-12 Projected Expenses (USD)**



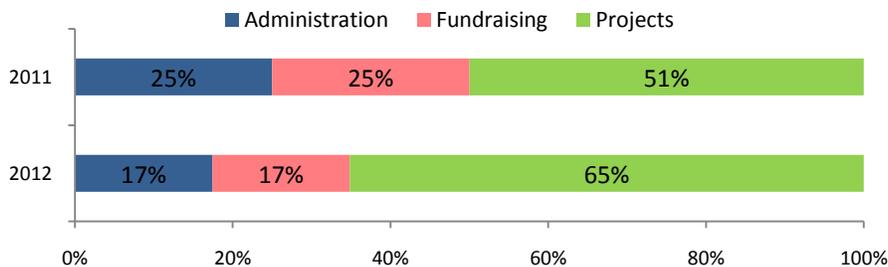
**2010-12 Projections of Cumulative Revenues and Expenses (USD)**



### How We Spend Your Money

As a new organization, we must build strong domestic operations in order to successfully support our global project sites. However, we are constantly looking for ways to maximize the proportion of our financial resources that are spent directly on our projects themselves. As a result, our members are strictly unpaid volunteers and interns. We anticipate that our project expenditures, which range from travel costs and capital equipment purchases to medical and school supplies, will continue to increase as a percentage of our overall expenses as our organization matures.

**2011-12 Projected Expense Breakdown**



**For more information, email [info@empowerenergygroup.org](mailto:info@empowerenergygroup.org)**

**or**

**go to our website [www.empowerenergygroup.org](http://www.empowerenergygroup.org)**

# em[POWER] Newsletter

Winter, 2011 | Vol. 1, Issue 1



Kachra Kundi, Pakistan. (Photo by Urooj Mughal, 2009)

## Welcome to the first-ever em[POWER] news bulletin!

Over the last two years, em[POWER] has quickly grown from a discussion tossed around between two students to an organization encompassing over 100 people working together across the globe towards one common goal: to try to challenge the role of a society's 'trash' and change it into a renewable resource that could be used towards the economic development of communities that are among the most destitute in the world.

The need for a bulletin such as this is clear: with the dynamic environment and nature of the organization, this newsletter serves as a way to publicize updates, learn more about the different people involved in the group, and exchange new ideas.

It is our hope and goal to publish a winter and summer newsletter each year so make sure to sign up for the mailing list!

*Tiffany Tong, President.*

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*em[POWER] Energy Group, Inc. is a New Jersey-registered non-profit 501(c)3-pending organization that seeks to revitalize landfill communities throughout the world using a modular and scalable cooperative development model based on renewable resources.*

*By coordinating and streamlining the waste sorting process of landfill scavengers, the em[POWER] model will improve the sorting efficiency of recyclables, turn organic waste into electricity and high quality compost, and provide the nucleus for a host of community-owned businesses. This will in turn provide community access to electricity, enhance educational opportunities, improve local health, and raise worker wages, while reducing greenhouse gas emissions and waste overflow.*

*By having a series of autonomous co-op units around the world, em[POWER], as an umbrella organization can help them access markets which require scale for entry.*

*Our overarching vision is to convert a form of poverty into a mechanism that can be used by a community to improve their living conditions and allow them to make a positive contribution to society.*

### More about this newsletter

- We hope to publish two issues a year: January and July
- To sign up for the distribution list or to contribute articles, media, opinions, etc., email: [newsletter@empowerenergygroup.org](mailto:newsletter@empowerenergygroup.org)

**..empowering landfill  
communities  
through renewable  
energy from waste  
solutions..**

em[POWER]

## em[POWER] in the News

### Business Today Article:

<http://www.businesstoday.org/sites/default/files/S10-reduced.pdf>

### Rutgers University Homepage Article:

<http://www.rutgers.edu/about-rutgers/way-empower>

### Princeton University Homepage Article:

<http://www.princeton.edu/main/news/archive/S27/61/29G57/index.xml?section=featured>

### MIT Clean Energy Prize Semifinalist Announcement :

<http://www.masshightech.com/stories/2010/03/08/daily59-MIT-Clean-Energy-Prize-semifinalists-named.html>

### Kaufmann Foundation Grand Challenge Stories Competition Announcement:

<http://www.grandchallengestories.org/category/winner/>

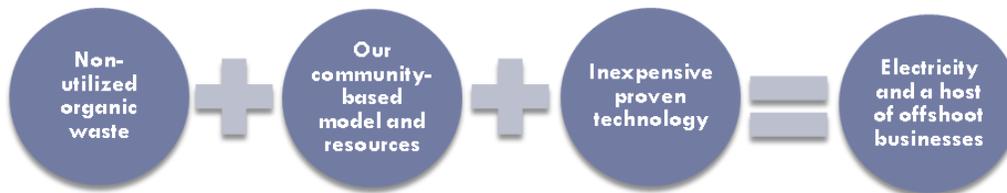
### Primary 2011 Goals

- Set up digester and/or composting prototype for proof of concept
- Raise supplies for partner schools in Karachi, Pakistan and Dhaka, Bangladesh
- Assess water purification and healthcare needs in partner communities
- Explore partnership opportunities in Cambodia, Mexico, and Brazil



Photo by Urooj Mughal, 2009

## The em[POWER] Equation



## Featured Member: Ryan Integlia

Ryan is a PhD student in the Electrical and Computer Engineering Department at Rutgers University, studying nanophotonics: slow light and superprism effects. He is also involved in a certificate program in Planning and Public Policy and received a Masters of Science working with both the Electrical and Civil Engineering departments on Wireless Sensor Networks. Ryan's industry experience includes work with IBM in the server systems division and Siemens in the RFID and Wireless Sensor Networking group

His experiences have led him to believe that entrepreneurship and innovation are the building blocks to any self sustaining solution, and he carries that mindset into much of his work. Ryan's volunteer efforts to support local communities have included many endeavors such as soup kitchens, food drives, troubled teen programs, children's hospitals and local schools. He has also been involved in social awareness media campaigns and has assisted various non-profits on their engineering aid strategies.

### Fast Facts About Ryan:



Graduate Student, Electrical Engineering and Computer Science Department, Rutgers University (USA)

See page 4 for Ryan's account on the origins of em[POWER]!

**em[POWER] Position:**  
Executive Director

**Hometown:**  
Wycoff, New Jersey (USA)

**Job:**

**Alma-mater:**  
Rutgers University (USA)

**Fun Fact:**  
Loves to travel, hike, sketch!

## 2010 Milestones

for all the latest news, go to [blog.empowerenergygroup.org](http://blog.empowerenergygroup.org)

### February

- em[POWER]'s *Business Development Team* wins first place (\$3k) in Princeton University's annual *TigerLaunch* Competition, in the "Social Entrepreneurship" category
- The same day, em[POWER] also wins first place (\$10k) in Princeton University's *Class of '76 Green Business Plan Competition*

### April

- em[POWER] enters the MIT *\$200k Clean Energy Prize Competition* again, this time becoming finalists in the competition in the "Deployment" category
- em[POWER] also wins the Kauffman Foundation *Grand Challenge Stories Competition* (\$3k)
- Faaez Ul Haq* (Princeton University) represents em[POWER] at the *Presidential Summit on Entrepreneurship in Muslim-Majority Countries* in Washington, DC
- Nasir Uddin*, *Sho Ohata*, and *Zachary Gao* (Rutgers University) represent em[POWER] at the *Clinton Global Initiative* in Miami
- em[POWER]'s Rutgers University Chapter host "Wasteland to Homeland," a full-day event dedicated to raising awareness about the project and conditions of communities living in landfill communities, through art exhibits, performances, and a special lecture by 2008 CNN Hero of the Year, Phymean Noun (People's Improvement Organization, Phnomh Penh, Cambodia)
- Students at Rutgers University's Edward J. Bloustein School of Planning and Policy create a comprehensive report on em[POWER] for their Energy Planning Studio
- Ryan Integlia* (Rutgers University) gives a presentation at *TEDx Rutgers*

### June

- em[POWER] launches an internship program with both domestic and international opportunities

### July

- em[POWER] members Nurullah and Joya Hajra make an on-site visit to the Matuail Landfill in Jatribara, Bangladesh
- em[POWER] establishes a water purification-to-energy project with Professor Lam of Rutgers University

### August

- em[POWER] secures office space in Bangladesh through a local partnership with Dnet

### November

- Henry Chao*, *Dalia Nahol*, and *Nasir Uddin* (Rutgers and Princeton Universities) attend a workshop on non-profit development sponsored by *DoSomething.Org* in New York City.

### December

- em[POWER]'s Rutgers University Chapter raises \$1000 worth of school supplies for our partner school in Bangladesh
- em[POWER]'s Rutgers University Chapter starts a pen-pal project with students in Bangladesh

## Members' Milestones

### ▪ Congratulations to the Class of 2010!

Recent Graduates: Nasir Uddin (BS, Rutgers University), Hanif Yazdi (BA, William & Mary), Jacob Hiller (BA, Princeton University), Michael Smith (BA, Princeton University), Fahad Shams (MFA, Princeton University), Sho Ohata (BS, Rutgers University), Wali Akande (PhD, Princeton University), Naveen Alam (MBA, UC Berkeley)

### ▪ The em[POWER] Family continues to grow!

Mr. Yusuf Oni and his wife Mansourat had a son in November, 2009 (NJ, USA)

Mr. Yawar Herekar and Ms. Atiya Yawar got married in July, 2010 (Karachi, PK)

Send us your news! [newsletter@empowerenergygroup.org](mailto:newsletter@empowerenergygroup.org)

## The origins of em[POWER] by Ryan Integlia

*Shaping a mindset of charity.* That is what I feel is important.

My perspective is based on a balance of family culture, an evolving awareness and the ability to cherish requests for help. I was born and raised in North Jersey in a small town spotted with tiny farms within walking distance of my house. My family has origins in Italy and then Queens, NY on my father's side; and Germany and then El Paso, Texas on my mother's side. My mother and grandmother instilled a sense of awareness that has helped provide me with perspective on all aspects of my life. When I was young, my grandmother would take me to homeless shelters and soup kitchens as part of her routine volunteer work. I remember, as a child, not fully understanding what I was seeing in the beginning, but eventually I realized there was something unusual about how happy they were to see us. The difference I noticed was in how other people outside the shelters would ignore us as we passed them on the street, whereas the people in the shelter would not. It seemed strange to me. This contrast in behavior was made more obvious one day in NYC, when a homeless woman approached us for money, but my mother would not give her any. Instead, she took her with us into a restaurant for lunch. At one point my mother got up to talk to an employee and while she was gone the people sitting next to us made fun of me and my sister for giving the woman food. I will never forget that.

Juarez, Mexico was where I found my next guiding event. When I was older, my grandmother took me into the more urban areas of Juarez and as we got off the bus, we found ourselves getting off in the middle of a four way intersection with a government soldier armed with an AK-47 at each corner. Then within moments of leaving the bus, we were surrounded by hundreds of children 5 years old and younger asking us for anything we could give. By the time we reached the edge of the crowd of children, my sister and I had given everything away, from gum and candy to money and hats. Later, near the Mexican side of the Mexico US border I encountered a community of people living in a border waste dump. These experiences became some kind of dormant catalyst, providing me with a problem that would reside in my mind, waiting to be solved. Though like any solution, it could not emerge in a vacuum. It required a reaction of ideas, people and words.

Years later, in graduate school, I found a new friend Muhammad Salman Khan of Karachi, Pakistan. We met in the main hall of the Rutgers Electrical Engineering building when he was lost, looking for a building called WINLAB that was 5 miles off campus with no direct mass transit connection. The university did not provide access to the building, which meant he would not reach it without a car, so I offered to drive him. During our trip we eventually reached a discussion of a community of people living in an unregulated Karachi landfill, and his work to support the community and the Al Khair school built on the site 20 years ago. The original goal was the use of a wireless networking organization to provide that support. He was successfully able to work with Oracle to organize an endeavor that provides employable job skill training and later was able to provide a scholarship program. Eventually our discussion led us to the conclusion that wireless networking was not the most appropriate method for helping every member of this community of people living in garbage and this brought us to the idea that they were living in the means to help themselves. A new type of humanitarian aid strategy began to immerge from our ideas and eventually became the concept of *Renewable Resource Oriented Development*, the basis for em[POWER].

We helped coordinate the first on-site trip in 2008, with the help of NED University students of Karachi, to gather data, take pictures and show our support. The information gathered and the humanitarian aid strategy we created became the basis for poster presentation and interviews at an International EWB conference in Seattle. Three additional trips occurred in 2009 as a joint effort of Rutgers, Princeton and other international students and professionals. The first trip provided art supplies to some of the children of the Karachi landfill so that they could have a few hours of creativity that they might not have had. The following trip was to collect video footage of the environment for a short documentary. The most recent trip was to assess the most critical needs of the community. Additionally, work in Bangladesh has been expedited by an on-site trip by students from William and Mary and Rutgers and was successful in forging relationships with the local community and multinational organizations invested in the region.

While in the midst of trying to balance classes, research and this project, I realized something incredible, I was surrounded by friends like Salman Kahn and Tiffany Tong. We found ourselves, along with others, being drawn to the ideals that this concept stands for, in that we are simply trying to show the world that poverty can have a solution. The idea is then if one form of poverty can be solved then there is no reason why others cannot be. This provides a general realization: that eventually when we pass a person living under a blanket on the street, we no longer need to feel the pressure to ignore this person out of fear of our own helplessness; instead, like many other types of poverty, this represents a problem that can be embraced.

*Ryan, Executive Director.*

## Wasteland to Homeland: A Day of Global Service and Awareness Hosted by em[POWER]'s Rutgers University Chapter (NJ, USA)

**On April 26, 2010**, hundreds of students, faculty members, and community members packed the Douglass Campus Center at Rutgers University to attend a full-day program hosted by em[POWER]'s Rutgers University Chapter, founded in 2009 by Nasir Uddin and Sho Ohata. The program's main focus was to provide the general community with a holistic understanding of waste, education, poverty, landfill communities and the intersection of all of these concepts.

The program kicked off with an art exhibit revolving around artwork done by children living in landfill communities, including *Kachra Kundi*, to project their "voices." The art exhibit also displayed fine art work from Rutgers students and local artists with a focus on the themes of poverty and waste. Following the art exhibit was a three-hour speaker event that featured guest speaker Phymean Noun, a CNN Hero of 2008 and the founder of the *People Improvement Organization* (Cambodia). In addition to Noun, the program featured em[POWER] Rutgers' first ever Business Plan competition, with a grand prize of \$500, interactive activities, em[POWER] speakers, and live performances. All in all, it was a wonderful success!

Below is a sampling of photos from the event and art activity that led to the event. For more, go to

<http://admissions.rutgers.edu/blogs/students/post/2010/04/27/emPOWER.aspx>



*Paintings done by students at Al Khair (Karachi, Pakistan)*



*A student at Al Khair works on his painting*



*Art on display at the "Wasteland to Homeland" event*



*Waqas Jawaid (Princeton University, USA) leads the art activity at Kachra Kundi*



*Phymean Noun speaks at the "Wasteland to Homeland" event*



*Students at Al Khair work on their paintings*



*"Wasteland to Homeland" banquet*



*em[POWER]ed art*



*Arts and crafts are sold by local partners at the "Wasteland to Homeland" event*

## Want to help with the Newsletter?

Beyond project updates, we hope that in the future, members will contribute media, opinion pieces, personal accounts, and more. This is just the first issue, so we want to make each newsletter better than the last.

We want to form a team whose sole purpose is to work on this newsletter. If you are interested in helping – either as a contributor or editor, please email [newsletter@empowerenergygroup.org](mailto:newsletter@empowerenergygroup.org).

### This Issue:

**Editor-in-Chief:** Tiffany Tong **Contributors:** Ryan Integlia **Photo Credits:** Urooj Mughal, Phyllis L, Tiffany Tong

## Human Resources Corner

### Now Hiring

While we are always looking for fresh perspectives on all components of our project, below are some of the core positions that we are looking to fill. A full list of open positions is available on [idealists.org](http://idealists.org) (keyword search: em[POWER] Energy Group, Inc.). If you know anyone who is interested, please contact [hr@empowerenergygroup.org](mailto:hr@empowerenergygroup.org)

- Director of Public Relations
- Director of Human Resources
- Director of Research & Development
- Technical Recruiter
- Grant Writer
- Web Developer
- Executive Administrative Assistant

Once you know you want to get involved, just follow these four easy steps:

1. Email [hr@empowerenergygroup.org](mailto:hr@empowerenergygroup.org) to express your interest in joining the team. Include a brief description of yourself, your contact info, and the area(s) that you are interested in helping out with, if you already know.
2. Go to [www.empowerenergygroup.org](http://www.empowerenergygroup.org) to learn more about the project.
3. Contact the project sub-team leader(s) of the area(s) that you are interested in to receive a welcome packet.
4. **Start em[POWER]ing your world and spread the word!**

### em[POWER] Officers

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