ENERGY GLOBE WORLD AWARD

FINALISTS

2015

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Category Earth

From Trees to Forests to Water to Food: LIFE!

APPLICANT: GREEN ETHIOPIA
COUNTRY: ETHIOPIA

The overall objective of the Foundation Green Ethiopia is to fight erosion in rural areas of Ethiopia by reforesting hills and mountain sides primarily with indigenous trees. The developing forests increase biodiversity, soil fertility and support water harvesting.

1Bligh, Sydney – Skyscraper of the future

APPLICANT: INGENHOVEN ARCHITECTS + ARCHITECTUS
COUNTRY: AUSTRALIA

The 1Bligh sky scraper was erected with recycled material from the demolished buildings which were substituted by the new project and has a double skin façade with thermal insulation and operable inside sun shading blinds.

Sustainable Business Hotel

APPLICANT: CROWNE PLAZA COPENHAGEN TOWERS
COUNTRY: DENMARK

Crowne Plaza Copenhagen Towers is one of the first hotels in the world to be certified as a sustainable hotel, and it is Denmark's first carbon neutral hotel building using various environmental friendly technologies.

Category Fire

Abundance

APPLICANT: ABUNDANCE GENERATION
COUNTRY: UNITED KINGDOM

Abundance is a crowdfunding platform that makes it easy for anyone to invest in renewable energy and in the process increases positive engagement with renewable energy.

Sugarcane waste biomass torrefaction

APPLICANT: NFR BIOENERGY LLC
COUNTRY: USA

Sugarcane waste is usually left behind in the fields and burned, creating a huge negative environmental impact. This project converts the biomass into torrefied energy pellets, replacing the use of coal or wood.

How water and bleach make a Liter of Light

APPLICANT: MYSHELTER FOUNDATION
COUNTRY: PHILIPPINES

Liter of Light is an open-source two step solution to build a grassroots micro-solar industry in a country by creating a livelihood program that trains women from low-income populations to assemble locally sourced, sustainable, and affordable solar products.

Category Water

Ceramic Pot Filters for water treatment

APPLICANT: SWCEA
COUNTRY: TANZANIA

Ceramic pot water filters treat contaminated water by way of filtration, thereby reducing the demand for conventional water treatments like boiling water, which uses non-renewable bio-mass & fossil fuels and produces carbon emissions.

Qunli stormwater park - a green sponge in the city

APPLICANT: TURENSCAPE, AND COLLEGE OF ARCHITECTURE AND LANDSCAPE, PEKING UNIVERSITY
COUNTRY: CHINA

Urban floods caused by storm water are a big problem in China since contemporary cities are not resilient when faced with inundations of surface water. The Qunli stormwater park cleans and stores this water and provides a green space for humans, animals and plants.

Tehran sewerage project

APPLICANT: TEHRAN SEWAGE COMPANY
COUNTRY: IRAN

The Tehran Sewage Company is constructing and operating the largest wastewater treatment plant in the Middle East which contributes to water conservation on a large scale.

Category Air

Race to reduce

APPLICANT: CIVICACTION
COUNTRY: CANADA

The smart energy office challenge Race to Reduce is an innovative initiative that challenges Toronto Region's commercial office sector to publicly commit to collectively reduce energy use by at least 10% over four years.

Electric powered lorry for daily carriage of goods

APPLICANT: COOP GRUPPE GENOSSENSCHAFT
COUNTRY: SWITZERLAND

As Coop aims to be CO_2-neutral by 2023, they have shifted part of their goods transports from streets to rails, fueled their trucks with biodiesel and now use electric trucks to achieve their goal of a CO_2-neutral goods transport.

Winery Galant: smart show piece for energy efficiency

APPLICANT: JIRI MARIAN
COUNTRY: CZECH REPUBLIC

Jiří Marian proved that even a hotel and winery of twelve acres can minimize its operating costs and environmental impact when excess heat, waste and greenhouse gas that are produced on site are cleverly used.

Category Youth

Freshwater Cup Environmental Football Tournament

APPLICANT: TOLEDO INSTITUTE FOR DEVELOPMENT AND ENVIRONMENT
COUNTRY: BELIZE

The Freshwater Cup is an annual football tournament with a difference - to participate, each team of 18 school children (ages 10-12) must plan and execute an environmental project in their community.

The Future Conservationist and Farmers Program

APPLICANT: THE SMALLHOLDERS FOUNDATION
COUNTRY: NIGERIA

The 'Future Conservationist and Farmers Program' tackles youth unemployment by practically training young secondary school students (especially girls) with practical and valuable skills in food growing and livestock rearing.

Students awareness and motivation campaign

APPLICANT: EDUVISION FOUNDATION
COUNTRY: NEPAL

Environmental awareness and motivation classes are conducted in schools to teach children to take responsibility for their own environment and for the environment in general by adopting a part of the city that has to be kept clean.

Special Prize „Green Building and Best Practice Sustainability“

PROJECT: MEGA PARS - IRAN
APPLICANT: ARIA OMRAN PARS PLAN AND DEVELOPMENT CO.

MegaPars is the first green mall of Iran that combines various aspects of sustainability, featuring a green roof and a waterfall while using energy and water saving techniques. Most importantly, it serves as a flagship project in an oil rich country.

Category Earth

From Trees to Forests to Water to Food: LIFE!

APPLICANT: GREEN ETHIOPIA
COUNTRY: ETHIOPIA

The overall objective of the Swiss based Foundation Green Ethiopia is to fight erosion in rural areas of Ethiopia by reforesting hills and mountain sides with primarily indigenous trees. This is in line with the Foundation's understanding that developing natural resources makes our planet a richer place to live. The organization financially supports the production of seedlings, which are then afforested by local peasant and women associations to the hills and mountains surrounding their agricultural land, typically during three years.
To ensure protection of the newly planted tree seedlings, the Foundation is also financing the guarding of the plantation area, typically for the subsequent five years. A major challenge was raising enough funds and also to find farmers who shared its vision, who understood that by this project they can lift themselves out of poverty and who would be willing to work for free to achieve these goals.

During a visit of the Foundation's President Kurt Pfister to Ethiopia he saw the potential of this poor country regarding natural resources and agriculture, and especially the interest of the rural people to work hard to improve their and their children's life. Pfister, who was already retired, had enough time, and from his business contacts he could raise some funds to start producing indigenous trees with women in a nursery and to plant these seedlings to a nearby hill. Now the developing forests increase biodiversity, soil fertility and support water harvesting. The resulting changes include honey production, increased productivity of agricultural fields and sufficient water for a second crop rotation through irrigation and planting of vegetables and fruit trees. In summary: all those projects allow a cycle of trees – forests – water – nutrition – livelihood.

Pfisters' dedication and the enthusiasm that came up when first results showed up was crowned with success and brought outstanding results: 5.8 million trees were planted in 2013 (since 2001 a total of 16.7 million trees). 2,139 hectares were afforested in 2013 (since 2001 at total of 6,816 hectares. 28 peasant and women associations were empowered. Approx. 700 full-time and 450 part-time workers are active in the nurseries. A total of 106,635 fruit tree seedlings were distributed to farmers (since 2001 a total of 530,000). 11 dams and6 small river diversions were built since 2001. In 2013 a total of 9 motor water pumps and 6 treadle pumps were delivered for irrigation (since 2001 a total of 120 motor water pumps and 85 treadle pumps). 800 hectares of vegetable plantations were established and 450 bee houses were distributed to farmers. In 2013 women were donated 420 donkeys (since 2001 a total of 1350 donkeys). Pfister wants to motivate even more farmers to dedicate to the reforesting project and will intensify discussions with locals to convince them.Another goal is to train them in further activities like marketing or processing of agricultural production and to support initiatives like facilitating market development, providing loans for the construction of mills, etc.

- Fight against erosion in rural areas of Ethiopia
- Reforestation of hills and mountain sides
- 16.7 millions of trees have been planted since 2001
- 6,816 hectares of vegetable plants since 2001
- 530,000 fruit tree seedlings distributed to farmers since 2001

The overall objective of the Foundation Green Ethiopia is to fight erosion in rural areas of Ethiopia by reforesting hills and mountain sides primarily with indigenous trees. The developing forests increase biodiversity, soil fertility and support water harvesting.

ID: 84746

Category Earth

1Bligh, Sydney – Skyscraper of the future

APPLICANT: INGENHOVEN ARCHITECTS + ARCHITECTUS
COUNTRY: AUSTRALIA

The motivation and challenge of this project was to reach the next step in sustainable design and green building design. As the population grows, so must the height of the buildings, so it should be a main area of focus at this time to improve the construction and design of skyscrapers on an environmental and aesthetic level. This project set out to do just that.

The 139-metre tall '1Bligh' office building in Sydney was inaugurated in autumn 2011. Due to its compact geometry and a slight rotation of the building in relation to its site, all offices enjoy unobstructed views of the city's harbor. The structure of 1Bligh was erected with recycled material from the demolished buildings which were substituted by the new project. Recycled material was used for 60% of the concrete and 90% of the steel structure. 1Bligh is executed with a double skin façade. The façade provides operable sun shading blinds within the wind and weather protected façade cavity - effectively functioning like an external sun shade since the thermal insulation of the façade is the inner glass layer. The drastically reduced heat gain results in a 15% reduced energy demand for cooling. The area where you would usually find the ground floor was not built-up to provide space to the public. The building itself begins on the 1st floor, which was made possible by a special column design. The high-rise will be a significant addition to Sydney's skyline. In addition to its spatial efficiency the building boasts an ecological concept that is not only unique for Sydney but also for the entire Australian continent. Furthermore, the building has received the highest six star certificate of the Australian Green Star environmental rating system. Achieving the 6-Star Green Star rating in design and construction required a great deal of collaboration, and an integrated design approach that allowed all of the buildings services to work together, connected by a sophisticated BMS system and dedicated commissioning, tuning and monitoring practices. The major challenges involved in this project were to design a building that fits into the urban grid to ensure equal use and orientation for all users of the building as well as to achieve a high level of amenity and excellent energy efficiency in a fully glazed tower.

Christoph Ingenhoven studied architecture at RWTH Aachen and Kunstakademie Duesseldorf. He is thefounder of Ingenhoven architects. Currently his main projects are the Main Station Stuttgart, Marina OneSingapore, Google California and Tokyo Toranomon Hills. Christoph Ingenhoven is a member of numerous architectural organizations and juries. He is an appointed member of the NRW Academy of Science and Artand also cofounder of DGNB, Green Building Council. Christoph believes that skyscrapers globally ensure thesurvival of human beings on the earth. In the year 2050, five billion people will be living in the megacities of the world. A life without high urban density i.e. high-rise buildings is unthinkable and would be ecological negligence.

- All offices enjoy unobstructed views of the city's harbor
- Raised to allow a public plaza at street level
- The high-rise will be a significant addition to Sydney's skyline
- Emphasis on spatial efficiency
- Received the highest six star certificate

The 1Bligh sky scraper was erected with recycled material from the demolished buildings which were substituted by the new project and has a double skin façadewith thermal insulation and operable inside sun shading blinds.

ID: 99632

Category Earth

Sustainable Business Hotel

APPLICANT: CROWNE PLAZA COPENHAGEN TOWERS
COUNTRY: DENMARK

Crowne Plaza Copenhagen Towers is one of the first hotels in the world to be certified as a sustainable hotel, and it is Denmark's first carbon neutral hotel building. The hotel, before it opened in 2009, had joined the UN's Global Compact - the largest Corporate Social Responsibility (CSR) declaration project in the world. Throughout the entire hotel (CPCT) innovative solutions were implemented, which makes CPCT a frontrunner within sustainability.

Some of the major energy-efficient technologies CPCT implemented throughout the hotel include
Denmark's largest privately owned building integrated Solar Panel Park. All sunny surfaces on Copenhagen Towers are covered with ultra-thin and high technology solar panels. This generates more than 200,000 kWh power on a yearly basis – the equivalent of the energy consumption in 60 Danish family houses. The first ever groundwater-based cooling and heating system in Denmark was installed. Copenhagen Towers extracts heating and cooling from groundwater, 100 meters below surface. This system is unique as the water that is used for cooling in the summer is stored and is re-used for heating in the winter. It reduces the energy consumption used to cool and heat the building by up to 90% compared to an equivalent building.

At the end of 2012, Crowne Plaza Copenhagen Towers became the first hotel in Denmark to be certified as complying with the Danish standard for social responsibility DS 49001 (ISO 26001) and the international environmental management standard ISO 14001. The hotel therefore meets the stringent requirements set by the above standards in the following areas: Professional management, human rights, working conditions, environmental impact, professional business ethics, consumer affairs and development and involvement in local society.

- One of the first sustainable hotels in the world
- Denmark's first carbon neutral hotel building
- Solar Panel Park generates more than 200,000 kWh power annually
- Groundwater-based cooling and heating system
- Energy consumption for heating and cooling was reduced by 90%

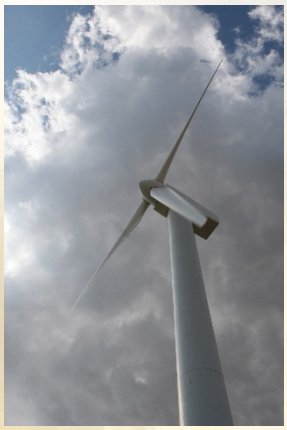
Crowne Plaza Copenhagen Towers is one of the first hotels in the world to be certified as a sustainable hotel, and it is Denmark's first carbon neutral hotel building using various environmental friendly technologies.

ID: 145600

Category Fire

Abundance

APPLICANT: ABUNDANCE GENERATION
COUNTRY: UNITED KINGDOM



Abundance was launched in 2012 as the UK's first FCA (Financial Conduct Authority) regulated crowdfunding platform. It seeks to do two things: opening renewable energy investment to all and in the process increasing positive engagement with renewables, whilst also democratizing the world of investing. It makes it easy for anyone to invest in renewable energy and experience the financial and social benefits for themselves.Estimations suggest that more and more people will positively engage with renewables and ask for more of them, in turn increasing their deployment.

In the two years since the first project launched, Abundance has achieved a great deal. Close to £ 7,000,000 have been invested in a total of eight renewable energy projects by almost 1,500 people, with some investing the minimum of just £5 and others investing more than £50,000. Originally only open to UK investors, Abundance has since adapted to allow investment from EEC (European Economic Community) citizens. The eight wind and solar projects financed by Abundance investors have added over 3.6MW of renewable electricity capacity to the UK grid and save an approximate 1,700kg CO_2 emissions from entering the atmosphere.

While working towards a cleaner environment using low-carbon technology, Abundance is also improving the lives of numerous groups such as investors and people living close to projects. Investors benefit from receiving inflation-beating returns on their investment, whilst communities benefit in a number of ways. People can, and often do, invest in projects near to them. This keeps some of the financial benefits of renewable energy in the local area. Furthermore, a number of the projects offered by Abundance have a social impact. These have included solar panels on schools providing cheaper electricity, and thus more money for resources, as well as a practical demonstration of renewable energy for pupils. Others have generous community funds, consisting of a proportion of the revenue of certain projects being donated to local causes, for example a car scheme to combat rural isolation.

- Investing into renewable energy becomes easy for anyone
- Democratizing the world of investing
- £ 7,000,000 have been invested in 8 projects
- 3.6 MW of renewable electricity capacity have been added to UK grid
- 1,700 kg CO_2 emissions have been saved

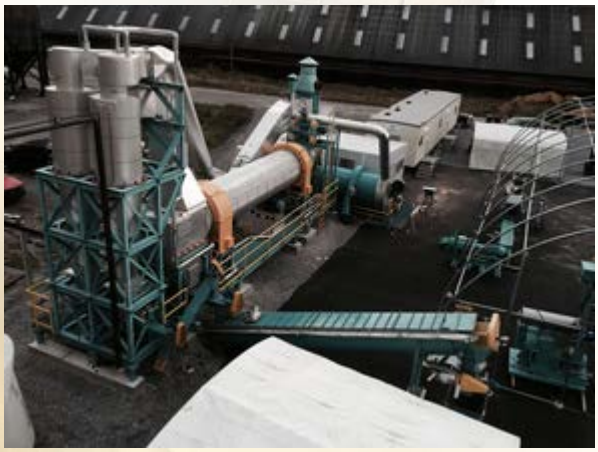
Abundance is a crowdfunding platform that makes it easy for anyone to invest in renewable energy and in the process increases positive engagement with renewable energy.

ID: 129847

Category Fire

Sugarcane waste biomass torrefaction

APPLICANT: NFR BIOENERGY LLC
COUNTRY: USA



NFR BioEnergy LLC specializes in the torrefaction of sugarcane waste biomass, to produce torrefied energy pellets, for the use as direct coal replacement in power plants, residential heating applications and the production of high-grade bio-carbon. The high-grade bio-carbon can be utilized in the production of steel, aluminum, plastics and water filtration as well as the production of high-grade fertilizer. NFR BioEnergy designed and built the first biomass torrefaction facility globally, using sugarcane waste as raw material. A 2 metric ton per hour (18,000 metric tons per annum) torrefaction facility was installed in White Castle, Louisiana and currently a 200,000 metric tons per annum biomass torrefaction facility is being constructed at the same site, while another 8-10 such facilities are planned to be built in the next 5 years. The biomass torrefaction facility is designed to produce high-grade torrefied energy pellets and various high value carbon based materials from sugarcane waste. The energy pellets are hydrophobic, have a 30% higher energy density and a 30% higher bulk density than wood pellets. They have the same energy content as lignite coal and contain lesser amounts of moisture, sulfur, chlorine and ash compared to coal. The pellets can be co-fired in existing coal-fired power plants or even replace the use of coal without any modification or capital expense to the existing power plant. 3-4 metric tons of sugar cane waste with a moisture content of about 50% are used to produce 1 metric ton of torrefied energy pellets. Currently the sugar industry in the state of Louisiana produces 6-7 million metric tons of sugarcane waste annually. The majority of this waste is currently incinerated in the sugar mill boilers. The excess sugarcane waste that can't be burned in the sugar mill boilers because of environmental restrictions is stored in huge piles and left to slowly bio-degrade.

The sugarcane waste, left behind in the sugar cane fields, is usually burned in the fields, creating a huge negative environmental impact. NFR BioEnergy's mission is to convert all available waste sugarcane biomass into torrefied energy pellets and other high quality carbon based materials, while increasing the yield of sugar and closing the carbon cycle for the farming of sugar cane. The project's Phase 1 "Mini-Me" has created 14 permanent jobs with the potential to produce 18,000 tons of torrefied energy pellets per annum, utilizing annually 60,000-70,000 metric tons of sugarcane waste. Phase 2 and Phase 3 De-trashing and Maxi-Me create 48 permanent jobs with the potential to produce 200,000 metric tons of torrefied energy pellets annually, replacing the use of 200,000 tons of coal annually and utilizing 600,000-800,000 metric tons of sugarcane waste each year. Phase 4 will create an additional 400 permanent jobs with the potential to produce 1.6 million metric tons of torrefied energy pellets annually utilizing 6-7 million tons of sugarcane waste.

- 18,000 metric tons of sugarcane waste are turned into pellets annually
- Lesser amounts of moisture, sulfur, chlorine and ash compared to coal
- Energy pellets are hydrophobic and have a 30% higher energy density than wood pellets
- Sugarcane waste is turned into energy instead of being burnt
- 14 jobs were created with the potential for more

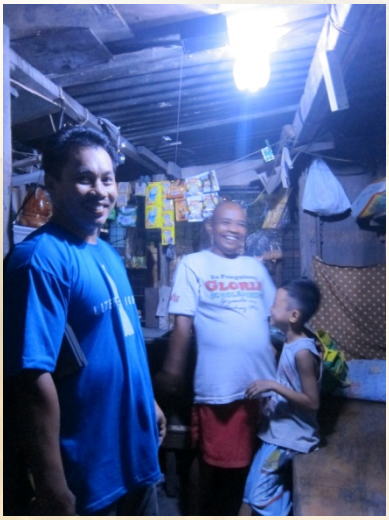
Sugarcane waste is usually left behind in the fields and burned, creating a huge negative environmental impact. This project converts the biomass into torrefied energy pellets, replacing the use of coal or wood.

ID: 159787

Category Fire

How water and bleach make a Liter of Light

APPLICANT: MYSHELTER FOUNDATION
COUNTRY: PHILIPPINES



One in five people globally do not have access to reliable electricity. Many, even those living in cities,do have power, but the sources are often so costly that they are forced to illegally tap into high voltage lines sometimes causing death or imprisonment. Liter of Light is an open-source two step solution to build a grassroots micro-solar industry in a country by creating a livelihood program that trains women from low-income and at-risk populations to assemble locally sourced, sustainable, and affordable solar products. Liter of (Day) Light is a DIY affordable system to allow the sun's rays into homes, schools and public centers at less than $ 2.

Liter of Light uses recycled plastic bottles, 10 milliliters of bleach and distilled water.The bottles with the ingredients are placed through the galvanized steel sheet roofs common in many developing countries. Inserted through the roof, each light refracts sunlight with the intensity of a 55-watt bulb, saving households $ 10 a month in electricity costs and 200 kilos of carbon emissions per year. Using simple tools and basic carpentry skills, local entrepreneurs and women's groups light up their communities for $ 10 with a sustainable lighting and mobile phone charging system that works day and night. The Liter of (day) Light with a water-filled bottle started in April 2011 with one unemployed carpenter, one dark home, and one soda daylight. Since then it has grown to 350,000 daylights in ten countries.

The second part of the program provides training and kits to cooperatives to teach them how to assemble and build a simple battery, LED lights and solar panels by hand in their villages. Micro-solar panels which are widely available (in the case of the Philippines) or solarettes are assembled by hand, and other electronic parts, which can be bought in most cities, are assembled by the community. With a simple circuit panel drill and soldering, an upgrade night solar LED light and mobile charger can be built and inserted into the already installed day solar bulb, providing 10 additional hours of power at night. Building solar products in the village not only builds skills and knowledge of repairing the devices. It also creates a grassroots green economy through enabling local entrepreneurs and women's groups to make a business by selling the LED and mobile chargers to other villages. With growing customer numbers, parts can be supplied by a coordinating social business at a small profit to cover operations and transport. The program was tested with several women's cooperatives in the Metro Manila area. So far, 200 solar night lights have been built and installed in locations throughout the national capital region. The Liter of (night) Light currently costs about $ 20 to make. Liters of (day) Light have been installed in more than 120,000 homes in the Philippines, saving $14.4 million off of electricity bills and 28 tons of carbon from being released into the atmosphere every year.

- Light from a recycled plastic bottle, bleach and distilled water
- In combination with mobile phone charging systems
- Today: 350,000 such lights in Philippines and another ten countries
- Savings of $ 14.4 m off on electricity bills and 28 tons of carbon every year
- New jobs and better livelihoods for women

Liter of Light is an open-source two step solution to build a grassroots micro-solar industry in a country by creating a livelihood program that trains women from low-income populations to assemble locally sourced, sustainable, and affordable solar products.

ID: 87354

Category Water

Ceramic Pot Filters for water treatment

APPLICANT: SWCEA
COUNTRY: TANZANIA

In 2009, SWCEA, a small, innovative Tanzanian NGO, introduced the ceramic pot water filter 'CPF' to Tanzania as a way to treat water for household use. CPFs treat contaminated water by way of filtration, thereby reducing the demand for conventional water treatments like boiling water which uses non-renewable bio-mass (i.e. wood) and fossil fuels and also produces carbon emissions. The CPFs are manufactured using locally available materials and labor and are simple, low cost, and easy to use. The core of the SWCEA solution is a proven household water treatment and safe storage method.

The CPF consists of a porous, round-bottom-pot-shaped filter element made of kiln-fired clay impregnated with colloidal silver. The porous clay acts as a physical barrier to micro-organisms and the silver acts as a bacteriostasis. The ceramic filter element is set into a plastic receptacle bucket fitted with a spigot and a lid. This unit provides safe storage, thereby protecting already filtered water from recontamination before use. Raw water seeps through the ceramic filter element by gravity at a rate of 2 to 4 liters per hour. Its pore size is small enough to remove harmful microorganisms at the rate of 99.99%, producing potable water. The filter element allows a family to produce about 30 liters per day with 3 to 4 fillings, or more if needed. Maintenance consists of scrubbing the ceramic filter element periodically to unclog pores and washing the receptacle bucket to prevent bacterial growth. It is manufactured and distributed locally, produces enough cool and natural tasting water for a family's daily use; it has a 5 year lifespan, costs only $0.0007 per liter and reduces carbon emissions by up to 2 tons per household. The filtered water has no significant taste issues (as is the case with chemical treatment). The filters are functionally stable in that there is only one moving part (the tap), and they require no external energy source (such as UV lamps) or consumables (such as chlorine packets or media that must be regenerated or replaced).

This project aims to train village sales agents to become clean water entrepreneurs and facilitate their entry into the sector, while targeting the most vulnerable population, children age 5 and under. SWCEA has partnered with CARE International to include the CPF in CARE's existing Village Saving and Loans Associations (VLSAs) that comprise of over one million members and Village Agents across Kenya, Rwanda and Tanzania. The VSLA program uses training and provision of access to products and micro-finance to empower the typically female Village Agent to become involved in growing markets by establishing their own micro enterprises.

- CPF removes harmful microorganisms at the rate of 99.99%
- Reduces carbon emissions by up to 2 tons per household
- Produces enough cool and natural tasting water for a family's daily use
- Manufactured and distributed locally
- Low cost and easy to use

Ceramic pot water filters treat contaminated water by way of filtration, thereby reducing the demand for conventional water treatments like boiling water, which uses non-renewable bio-mass & fossil fuels and produces carbon emissions.

ID: 97135

Category Water

Qunli stormwater park - a green sponge in the city

APPLICANT: TURENSCAPE, AND COLLEGE OF ARCHITECTURE AND LANDSCAPE, PEKING UNIVERSITY
COUNTRY: CHINA

Along with the expansion of urbanization and the climate change that causes unpredictable precipitation, urban floods caused by storm water become a global issue. Particularly in China, where most cities experience monsoon, 70-80% of the annual precipitation are in the summer; and in some extreme cases 20% of the annual rainfall can happen on a single day.

Contemporary cities are not resilient when faced with inundations of surface water. Conventional underground pipe and pump systems solve this problem but have a lot of disadvantages: Construction is very expensive, storm water is drained and wasted although aquifers are decreasing and cities suffer from water shortage, surface water and therefore water sensitive habitats disappear while water from the aquifers has to be used for irrigation. Multiple problems can be addressed when landscaping takes these issues into account.

A new urban district, Qunli New Town, with a size of 2,733 ha is being built in the east outskirts of Haerbin City in Northern China. Within this project, a storm water park was created in the middle of the new town which acts as a green sponge that cleanses and stores urban storm water, recharges the aquifer, protects native habitats and also offers recreational and aesthetic experiences. The park can retain and filtrate up to 500,000 m^3 of storm water annually and has successfully solved the storm water inundation problem for an area of 3 km^2 (10 times the area of the park). Water quality has improved dramatically since the storm water is being filtrated by a bio-swales system. Many native species of flora and fauna have been spotted in the park, including more than 20 species of birds. It serves as a unique public space for the residents of the new community, which has increased the value of the land surrounding the park by 100% within 2 years. Through the transformation of this dying wetland, storm water that has frequently caused flooding has now become a positive environmental amenity in the city.

- Up to 500,000 m^3 of storm water are cleansed and stored annually
- Aquifers are being recharged
- The storm water problem is solved for an area of 3 km^2
- More than 20 species of birds have been spotted in the new park
- Land value around the park has increased by 100%

Urban floods caused by storm water are a big problem in China since contemporary cities are not resilient when faced with inundations of surface water. The Qunli stormwater park cleans and stores this water and provides a green space for humans, animals and plants.

ID: 125715

Category Water

Tehran sewerage project

APPLICANT: TEHRAN SEWAGE COMPANY
COUNTRY: IRAN

Since water is of vital importance for all of us, the Tehran Sewage Company is constructing and operating the largest wastewater treatment plant in the Middle East. Out of 8 modules, 4 have been implemented so far and are already under operation. The implemented units produce 43 GWh of electric energy and 140 terajoule of thermal energy annually. Once the wastewater treatment plant is fully built, it will provide 200 GWh of electric energy and 700 terajoule of thermal energy per year. The country's largest wastewater transmission tunnel with a length of 27 km and the Middle East's largest wastewater vortex structure with a depth of 37 m were built. Vertices help to increase the speed of water transfer, decrease the losses, increase the lifetime of the tunnel and lower the administrative costs. Advantages of this project include the protection of the environment from contamination, increasing of public health, the prevention of contamination of the groundwater, the development of green spaces and the prevention of wastewater consumption for the irrigation of farms. The cleaned water is used to recharge the aquifers near Tehran and for agriculture which will increase the agricultural production.

- Largest wastewater treatment plant in the Middle East
- 43 GWh of electric energy
- 140 terajoule of thermal energy
- 27 km wastewater transmission tunnel
- Aquifers are recharged with clean water

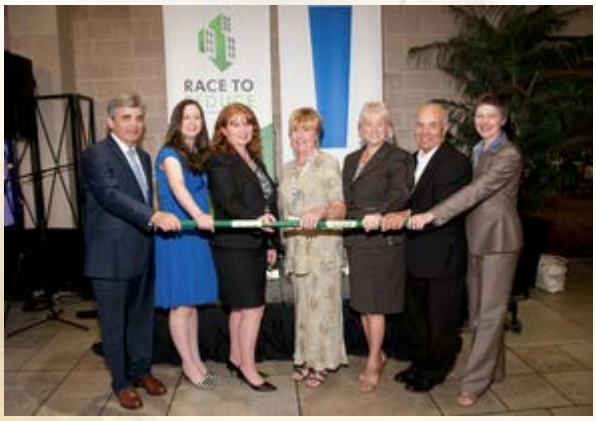
The Tehran Sewage Company is constructing and operating the largest wastewater treatment plant in the Middle East which contributes to water conservation on a large scale.

ID: 169213

Category Air

Race to reduce

APPLICANT: CIVICACTION
COUNTRY: CANADA



For over 10 years, CivicAction has brought together senior executives and rising leaders from all sectors to tackle some of the toughest social, economic, and environmental challenges in the Toronto region, Canada's largest urban center. It sets a non-partisan agenda, builds strategic partnerships, and launches campaigns, programs, and organizations that transform the region. Its 2008 environmental report indicated that office buildings consume 37% of electricity and 17% of natural gas and account for nearly one third of the Toronto region's carbon emissions.

Armed with this data, CivicAction brought the full spectrum of office building stakeholders to the table to identify and address barriers to broader adoption of energy efficiency measures, and proposed the formation of a leadership council that would develop solutions to these barriers. The smart energy office challenge Race to Reduce was launched which is an innovative initiative that challenges Toronto Region's commercial office sector to publicly commit to collectively reduce energy use by at least 10% over four years. Designed to align with government and market interests and address primary barriers to energy reduction within commercial office buildings, the Race to Reduce is the second largest regional energy reduction challenge in the world. It fosters unprecedented collaboration between landlords and tenants as a model for sustainable working, by encouraging results-based performance in energy reduction.

The Race to Reduce has made a significant impact on the region's commercial office sector, with over 32% participating. Since its launch in May 2011, the Race has attracted over 600 landlord and tenant participants and over 176 buildings, representing 67.8 million square feet. In just two short years, Race participants have collectively reduced their energy use by 9%, one point away from the four-year target. This equates to savings of over 139,026,000 ekWh or a reduction of 17,000 metric tons of GHG emissions, and to savings of over $10 million dollars over the four-year period, with annual savings of almost $11 million in perpetuity. The Race and its foundation of landlord-tenant collaboration is serving as a catalyst for the transformation of energy use practices in the marketplace locally, nationally, and internationally.

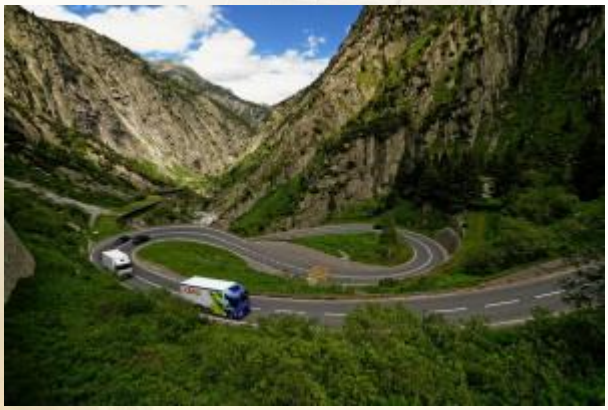
- Office building stakeholders publicly commit to reduce energy use by 10%
- Over 139,026,000 ekWh could be saved
- 32% of the commercial office sector are participating
- Over 600 landlords and tenants have taken part
- More than 17,000 metric tons of GHG emissions were saved

The smart energy office challenge Race to Reduce is an innovative initiative that challenges Toronto Region's commercial office sector to publicly commit to collectively reduce energy use by at least 10% over four years.

ID: 147014

Electric powered lorry for daily carriage of goods

APPLICANT: COOP GRUPPE GENOSSENSCHAFT
COUNTRY: SWITZERLAND



As Coop aims to be CO_2-neutral by 2023, CO_2 emissions of the goods transport have to be reduced. To reach this goal, they have shifted part of their goods transport from streets to rails, fueled their trucks with biodiesel and applied alternative engine systems. Hence, the use of the electric truck was a logical step aiming for a CO_2-neutral goods transport.

The advantages of electric powered vehicles are undoubted: they are energy efficient, silent and zero-emission when operated. Up to now, there was no suitable electric powered lorry for the carriage of goods available though. The 18 tons electric powered lorry developed by the Swiss company E-Force One sets new standards with its available weight of 10 tons for platform and cargo. Coop, as the first retailer worldwide, will use a lorry of this size for the daily supply of super markets. The lorry is being operated with current from water power. There is a photovoltaic system installed on top of the lorry to be used as an additional current source during the journey. Coop reduces their carbon dioxide emissions through operation of this electric powered lorry and decreases noise exposure at the same time. So far the goals have been met, with the electric truck being in use since January 2014 without major problems. Up to six distribution tours are made with the electric truck on one day to deliver goods from the distribution center at the suburbs of Zurich to supermarkets in Zurich (in total up to 240 km a day). After each second tour the chauffeur has to make a 45 minute break as regulated by law – these breaks, as well as the night-time, are used to fuel the truck at the charging station with environmentally friendly hydropower electricity.

Georg Weinhofer holds a diploma in industrial engineering and management from Graz University of Technology, Austria, with focus on energy and environmental technology. Before joining Coop, he was working as a research assistant at the Chair for Sustainability and Technology of ETH Zurich, Switzerland, where he obtained a Ph.D. with a thesis on corporate climate strategies. Since September 2009, Georg is head of the specialist department Energy/CO_2 at Coop. He, among others, is responsible for the realization, coordination, and communication of Coop's vision "CO_2-neutral by 2023".

- Lorry is energy efficient, silent and zero-emission when operated
- Can support 10 t of cargo
- Operated with current from water power
- PV system on top of lorry for additional current
- CO_2-neutral by 2023

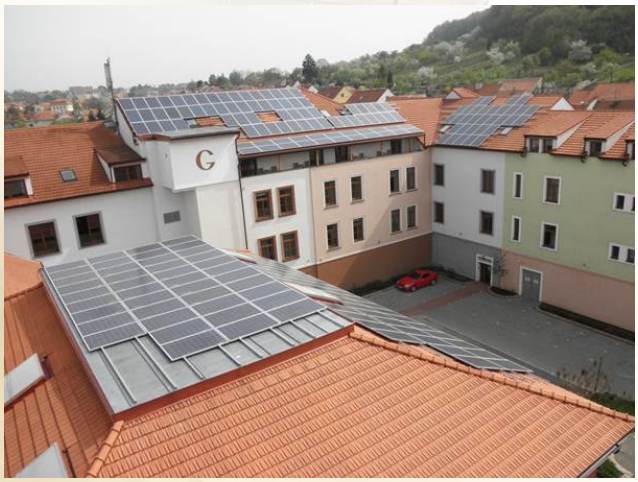
As Coop aims to be CO_2-neutral by 2023, they have shifted part of their goods transports from streets to rails, fueled their trucks with biodiesel and now use electric trucks to achieve their goal of a CO_2-neutral goods transport.

ID: 92640

Category Air

Winery Galant: smart show piece for energy efficiency

APPLICANT: JIRI MARIAN
COUNTRY: CZECH REPUBLIC



Greenhouse gases are not necessarily waste - they can also be used for wine production in the wellness sector. Sensible, environmentally friendly, responsible, economic behavior - that is the motto of Jiří Marian, who has implemented a project that is unique in its depth and scope in the hotel and the winery Galant in Mikulov (South Moravia). He proved that even a big object of twelve acres can minimize its operating costs when excess heat, waste and greenhouse gases that are produced currently on site are cleverly used. The original oil heating system was converted to a maintenance-free engine room.

Today, three CHP and six heat pumps are in operation, which convert the electrical power to cool or heat the winery and the hotel. Surplus heat from the wine fermentation can be used for water heating and refrigeration surpluses are used for refrigerators and freezers. The energy of the waste water from the hotel-spa is removed with heat pumps and also re-used. Water-air heat pumps use the energy of the exhaust air from the hotel premises. The entire building was insulated with a 15 cm thick polystyrene insulation and insulating wadding to prevent unnecessary heat loss.

In addition, the water is used in as many ways as possible: Wastewater is used for flushing toilets; rain water is collected in a reservoir and used in the automatic garden irrigation and fish farming. CO_2 is also emitted during wine fermentation but it is not released into the atmosphere, but instead used for bubble baths in the hotel spa. PV systems are located on the roof, where they are invisible from below.

- Winery and hotel spa to optimize energy consumption
- Energy from Photovoltaic
- CHP and heat pumps for heating and cooling
- Heat recovery from waste water
- Re-use of waste water and rain water harvesting

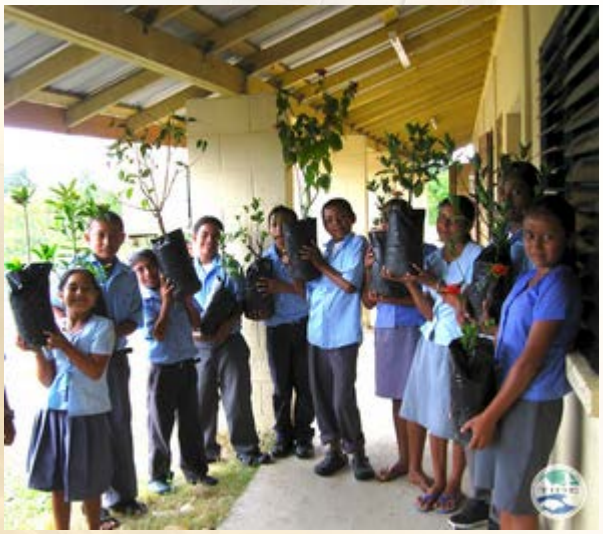
Jiří Marian proved that even a hotel and winery of twelve acres can minimize its operating costs and environmental impact when excess heat, waste and greenhouse gas that are produced on site are cleverly used.

ID: 113873

Category Youth

Freshwater Cup Environmental Football Tournament

APPLICANT: TOLEDO INSTITUTE FOR DEVELOPMENT AND ENVIRONMENT
COUNTRY: BELIZE



Based in the Toledo district of Belize, the Freshwater Cup is an annual football tournament with a difference - to participate, each team of 18 school children (ages 10-12) must plan and execute an environmental project in their community. Through the football tournament and the projects, the young participants develop important life skills and values, such as teamwork, planning, respect for others, self-esteem, civic pride, and commitment to the environment. School teams design and implement environmental mini-projects that protect freshwater resources and the coral reef downstream, and address an identified need in their community.

Since the project began in 2004, over 3,000 people have undertaken over 150 mini-projects, resulting in more than 6,500 trees planted along waterways, 33,000 lb of trash removed, 15 green spaces or organic gardens created, numerous environmental murals painted, two illegal dumpsites removed, and over 3,000 people receiving environmental education from their peers. After implementing the project, teams participate in a football tournament with surrounding schools (21 in total). Trophies are given for the top environmental projects and to the football winners. All participants receive school supplies, with more than 2,500 children having benefitted so far.

The Freshwater Cup was the first football competition in the district open to females and has given over 1,000 girls the opportunity to compete. The approach of the project is to put children at the center of attention and unleash their potential as agents of change. Through the environmental projects, children put their ideas into effect and learn what can be accomplished when we work together. The project has brought about a widespread shift in the way the younger generation thinks about the environment and has empowered many individuals in numerous ways, from girls taking up sports, and young athletes going on to play for the national team, to children turning around their academic performance, or founding environmental clubs.

- Children learn about teamwork, self-esteem and commitment to the environment
- More than 2,500 children have received school supplies
- Two illegal dumpsites were removed
- More than 1,000 girls were given the opportunity to compete

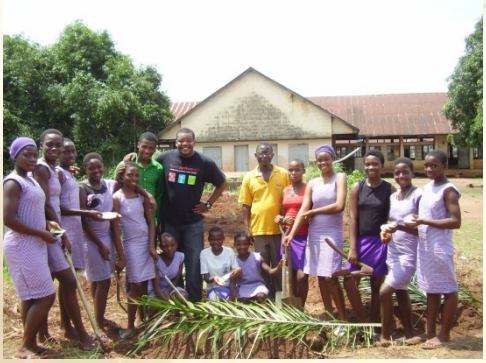
The Freshwater Cup is an annual football tournament with a difference - to participate, each team of 18 school children (ages 10-12) must plan and execute an environmental project in their community.

ID: 146960

Category Youth

The Future Conservationist and Farmers Program

APPLICANT: THE SMALLHOLDERS FOUNDATION
COUNTRY: NIGERIA



The 'Future Conservationist and Farmers Program' tackles youth unemployment by training young secondary school students (especially girls) with practical and valuable skills. This takes place by planting fruit trees and crops and the creation of livestock gardens in several secondary schools across Nigeria. The students grow the crops and fruit and rear the livestock, thus learning important lessons about sustainability and cultivation. The money raised by this endeavor is put into a savings account, which in turn allows the students to take micro-loans in order to produce a similar garden at home. Through this innovation, students acquire the skills to be self-sufficient and self-employed before they even leave school.

The aim of this project is that these agriculturally educated children will grow up and replace the aged farmers. They shall then utilize these new ideas and have a positive effect on the agricultural sector in Nigeria. Emeka Davis Lewechi decided to create the program after several youths came to the radio station where he was providing information on farming techniques, asking for funding. Instead of giving them money, he decided to give these young people something far more important - knowledge. His endeavor has been very successful with 10 ultra-modern and fully functional school gardens for practical agriculture teaching being established in 5 states of Nigeria. 4,500 students aged 12 - 25 years old have also acquired advanced practical agricultural and environmental management and agribusiness skills for self-employment.1,736 students have built gardens at home, increasing their household income/production by 55% and becoming ultimately self-employed in agriculture. The project has also done a lot for the autonomy of young women, providing them with the means to obtain their own income and therefore giving them an unprecedented choice about their life.

Emeka Davis Lewechi holds a Bachelor in Education Government and is currently a Rural Developer. He is also the Programs Officer of his current farmers program. Emeka has made a huge difference to the lives of many young people to date, all stemming from his passion to instigate a change for the better. He says that he does not believe we can repair the basic fabric of society until people who are willing to work have work. Work organizes life; it gives us structure and discipline.

- Tackling youth unemployment
- Teaching young people more effective ways of farming
- Providing young people with income possibilities
- Ridding the country of archaic farming techniques
- Providing young girls with choices they wouldn’t have had otherwise

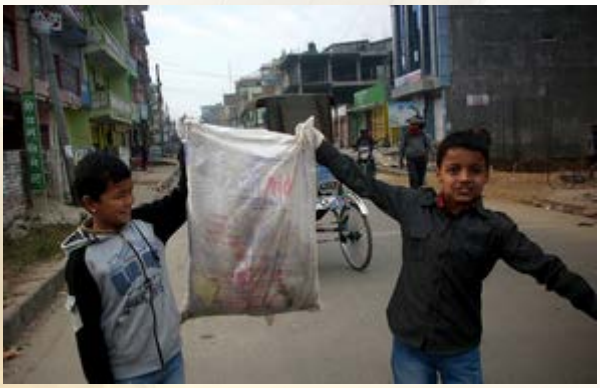
The 'Future Conservationist and Farmers Program' tackles youth unemployment by practically training young secondary school students (especially girls) with practical and valuable skills in food growing and livestock rearing.

ID: 99664

Category Youth

Students awareness and motivation campaign

APPLICANT: EDUVISION FOUNDATION
COUNTRY: NEPAL



EduVision Foundation runs a project called Clean Community Campaign Hetauda. Students are separated into two groups. The primary group consists of those in grades 4-7. EduVision partners with schools and colleges in the city, and conducts its environmental awareness/motivation class in the subjects social studies, health and environment or science. Students are first informed about the meaning of education in their lives, that it enables them to see problems and to solve them creatively so that society improves. The students then learn that taking small responsibilities as children prepares them to take bigger responsibilities as adults and their lives will benefit society as a whole.

They start with keeping their classrooms clean, followed by the school premise. The next step is to adopt a part of the city, preferably an area close to their school, to keep it clean and to create a healthy community. Weekly activities consist of clean-up campaigns with anti-littering messages, proper management of solid waste and separation into organic, inorganic and hazardous waste. More than 20 schools and colleges have been reached amounting to more than 10,000 students since November 2013.

Students have shown a remarkable change in their perception of waste:they raised their own fund to buy trash cans for their schools, participated in parody contests, quiz contests, weekly rallies and beautification of the city. Hetauda was awarded the cleanest city in Nepal in 2014. The goal is to reach at least 30 schools in the community this year. At the request of the Global Network for Sustainable Development(USA) and the Durbar Square Clean Up Foundation(Kathmandu) demonstration classes were given in three schools in Kathmandu, and EduVision has been chosen as a knowledge partner by the Global Network for Sustainable Development.

- Children learn to take responsibilities
- A part of the city is adopted and kept clean
- Clean-up campaigns with anti-littering messages
- Waste management and separation
- More than 10,000 students have been reached

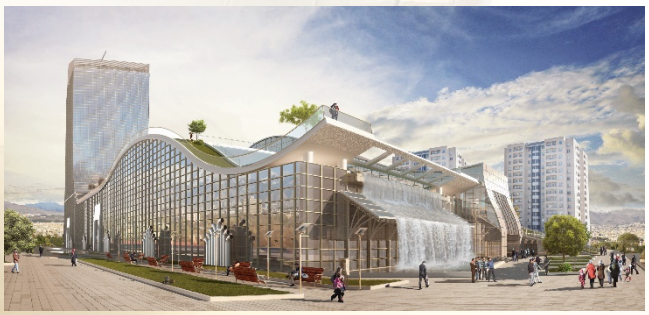
Environmental awareness and motivation classes are conducted in schools to teach children to take responsibility for their own environment and for the environment in general by adopting a part of the city that has to be kept clean.

ID: 140839

Special Prize „Green Building and Best Practice Sustainability“

Green mall Mega Pars

PROJECT: MEGA PARS - IRAN
APPLICANT: ARIA OMRAN PARS PLAN AND DEVELOPMENT CO.



Located in the center of Tehran is MegaPars, the first green mall of Iran, that combines various aspects of sustainability and catches the attention of every pedestrian. With its landmarks like a gigantic sparkling waterfall (24x11 m) or mesmerizing natural curves of the 1 ha green roof with herbal bushes and trees up to 4.5 meter height it is a distinguished green spot in the city. High tech control devices and absorbents for moist preservation increasing the soil quality are means to reduce the water consumption. In addition, gray water of nearby towers is recycled and rainwater of the surrounding area is collected by a drainage system for irrigation purposes. Dry toilets, auto spout valves and a waterfall recycling system further contribute to a reduction of water consumption.

The main obstacle on the path of becoming a green building for MegaPars was the location in an oil rich country where the energy price is much lower than in the rest of the world. This building is therefore a revolutionary pioneer in Iran in the field of saving energy that will bring about significant social and urban changes. The integrated BMS program with more than 8000 control points diminishes the energy consumption by up to 35% and is powered by highly efficient HVAC equipments. A glass curtain wall with a minimum U-value and low SHGC values in combination with the green roof which functions as an effective thermal proof also account for a low use of energy. Tenants pay for their energy use according to their consumption which encourages them to use as little energy as possible.

A PMS and PGS program in the parking area reduces the vehicles' driving time and avoids air pollution. The 20,000 m^2 of herbal landscape surrounding the mall also contribute to improve the air quality. MegaPars is not only a sophisticated green building and a mall, but it is also a destination that ensures the wellbeing of all family members. Iran is a country battered by war, sanctions and terrorism whose inhabitants need spaces to simply enjoy life. The green roof provides a quiet space for the elderly while the young people can enjoy the amusement park, the cinemas, play sports or bowling. With amenities rivaling even the greatest of international shopping centers, MegaPars is considered by many a testament towards what is reachable when nature and architecture come together to push commercial design to the next level.

- Distinguished green spot in the city
- Sustainable water and energy consumption
- 20,000 m^2 of herbal landscape contribute to improvement of air quality
- Place of enjoyment for the whole family
- Environmental flagship project in an oil rich country

MegaPars is the first green mall of Iran that combines various aspects of sustainability, featuring a green roof and a waterfall while using energy and water saving techniques. Most importantly, it serves as a flagship project in an oil rich country.

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