

## Associates



**Department of Tourism (DOT)** is the primary planning, programming, coordinating, implementing and regulatory government agency of the Republic of the Philippines in the development and promotion of the tourism industry, both domestic and international, in coordination with the attached agencies as well as with the private sectors and other government instrumentalities.



**Tourism Infrastructure and Enterprise Zone Authority (TIEZA)** is a government corporation of the Republic of the Philippines attached to the DOT and mandated to designate, regulate and supervise Tourism Enterprise Zones (TEZs) as a cultural, economic and environmentally sustainable area towards the primary objective of encouraging investments.



**Department of Environment and Natural Resources (DENR)** – The Department is mandated to be the primary agency responsible for the conservation, management, development, and proper use of the country's environment and natural resources. The DENR is the driving force in the pursuit of sustainable development, enabling stakeholders' participation in the protection, conservation, and management of the environment and natural resources for the present and future generations.



**Department of Energy (DOE)** - The Department is mandated by RA 7638 (Department of Energy Act of 1992) to prepare, integrate, coordinate, supervise and control all plans, programs, projects and activities of the Government relative to energy exploration, development, utilization, distribution and conservation.



**Nagoya Institute of Technology (NIT)** - Nagoya Institute of Technology (NIT) was founded in 1905 as Nagoya Higher Technical School, a pioneering academic institute dedicated to industrial education. It offers high-class education and research that support the technical innovation and industry enhancement of Central Japan. By cooperating with other universities of science and technology around the world, it develops new science and technology through interdisciplinary studies, and seeks to create a better future through education.



**Atelier Schmidt** - Pioneer in energy-efficient building through the use of renewable resources and appropriate technologies together with GrAT, Atelier Schmidt is involved in self-sufficient housing solutions.

## Implementing Partners

### GrAT-Center for Appropriate Technology

GrAT is a scientific association for R&D of Appropriate Technology. Since 1986 GrAT has been proactively responding to a wide range of sustainable development issues with its long-term vision of systematic development and practical demonstration of sustainable solutions.

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# GrAT

### Philippine Green Building Council (PhilGBC)

PhilGBC was founded in 2006. It functions as a community of building industry professionals committed to create and increase awareness in the design, construction and operation of buildings that are environmentally sensitive, economically responsive, safe and healthy.

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### Palawan Council for Sustainable Development (PCSD)

The PCSD is a multi-sector and inter-disciplinary body, which under the law is charged with the governance, implementation and policy direction of the SEP. It is directly under the Office of the President of the Republic of the Philippines.

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### Plataforma Solar de Almeria Centro de Investigaciones Energéticas, Medioambientales y Tecnológicas (PSA CIEMAT)

PSA-CIEMAT is the largest European centre for research, development and testing of concentrating solar technologies. PSA activities are integrated as a Division of R&D within the structure of the CIEMAT's Department of Energy.

PSA is responsible for technology transfer with long experience in promotion and dissemination of renewable energy and desalination technologies.

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### Asia Society for Social Improvement and Sustainable Transformation (ASSIST)

ASSIST is a non-stock, non-profit international capacity building organization that aims to achieve and witness meaningful changes to and for our planet and the people living on it. It works towards the development and protection of the economic, social and environmental conditions of the society by employing innovative and sustainable practices.

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## Building Energy Autonomous Resorts Creating Appropriate Technology Solutions

The European Union's EuropeAid, Switch-Asia Programme for the Philippines



Funded by



**switchasia**  
PROGRAMME

The European Union's SWITCH-Asia Programme

Implementing Partners







## The Zero Carbon Resorts Project

The tourism industry in the Philippines is growing fast, bringing employment opportunities to the region and strengthening the economy of the country. Tourism has, however, a high demand for energy and is responsible for a large amount of carbon emissions. By reducing energy consumption and by using locally available and carbon-neutral resources, the carbon footprint of the tourism industry can be significantly reduced.

**Zero Carbon Resorts (ZCR)** is a four-year project launched in 2010 with the support of the European Union. With the goal of enabling tourism SMEs in Palawan and other parts of the Philippines to switch from fossil fuel to renewable energy, this initiative focuses on building the capacities of local tourism enterprises to become energy-autonomous, and promoting local production of renewable materials and green technologies.

### Project Goals

**A large number of tourism SMEs (resorts, hotels, restaurants and other tourism establishments) will operate their facilities in energy-efficient ways, and guests will be familiar with energy-saving behaviours.** Energy-saving measures are suggested to the tourism SMEs through brochures and visual guidelines. The measures are derived from site audits of representative companies and guest surveys. Energy savings of 15 to 30% are expected.

**Capacity and knowledge of intermediaries, engineers, consultants, architects, planners, SME owners and managers will be increased.** Technical know-how is being transferred to local engineers, facility managers and hotel/resort staff during theoretical and practical training courses. Participants are taught how to diagnose problems related to energy consumption and how to solve those using appropriate solutions. The trainees will play a significant role during and after the project as disseminators of knowledge.

**Energy-saving technologies and products will be recognized and used by SMEs. Local production of key components will be prepared.** The demand side (how much energy and what kinds of energy services are needed, and how often?) is analyzed in comparison with the supply side (how much energy can be generated from local resources under sustainable conditions and what technologies are needed?). Based on this analysis, prototyping and testing of possible solutions will be conducted.

**A Zero Carbon cottage will be designed and constructed to be self-sufficient in terms of energy use, by utilising small-scale solar energy and bio-mass devices.** Architects and resort owners will use the best practice showcase (Zero Carbon cottage) as a reference for designing new resorts.

**Legal standards, policies and guidelines on building regulations will reflect high energy standards.** By involving regional government organisations, policy guidelines (clearance system) will incorporate project output for effective implementation.

### Initial Project Achievements

**March 2010: Briefing sessions** gathered SMEs to introduce the project concept, its benefits for participating SME and selected 26 Frontier Group resorts as representatives of tourism establishments in Palawan.

**May 2010: Training workshops on energy management** were conducted by international and local experts to equip professionals, owners and local technicians of tourism establishments with theoretical and practical knowledge on energy management.

**May to June 2010: A guest survey** was carried out "with 370 participants" to figure out consumption behaviour and perception of users.



**August 2010: ZCR experts and trainees performed energy audits** on site for the Frontier Group resorts to identify problems and improvement potential in their energy and resource consumption. A set of energy saving measures and recommendations was produced, which was later compiled in the ZCR Handbook vol. 1.

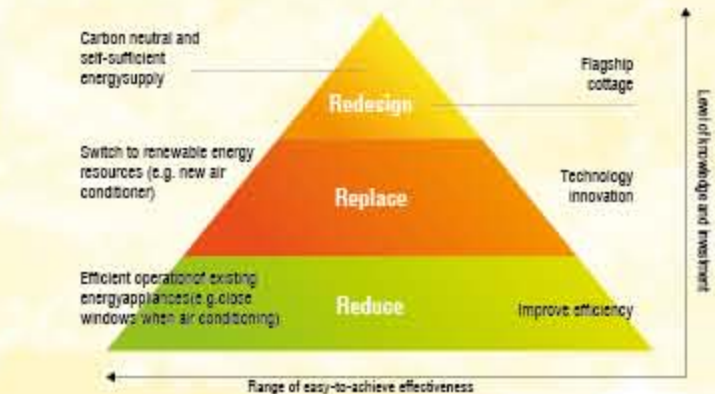
**November 2010: At the Stakeholders Conference,** project proponents presented the outcomes of the first year, energy audit findings and solutions, and showcased the implemented measures from one of the Frontier Group members.

**March 2011: A Local Promoters Training** was conducted for the staff of tourism associations, tourism agencies, local intermediary organizations and NGOs. They were trained to disseminate the project activities to a number of SMEs in other regions using the project dissemination tools such as the Handbook vol. 1.



### The 3R Solutions

A growing number of SMEs is joining the program network through the implemented multiplier strategy and will utilise the promoted 3R solutions.



The engaged 3R methodology provides a progressive approach. It starts with simple measures that are easy to implement, but remarkably improve energy performance (Reduce). The next step is to invest the savings from the previous Reduce solutions in substituting fossil-based and outdated technologies with more efficient and greener ones (Replace), followed by a total redesign of resort establishments providing a Zero Carbon system for future energy services (Redesign).

### Benefits for Participating SMEs

#### Reduction of energy costs

By implementing suggested improvement solutions for better energy efficiency as well as behavioural changes, you will be able to save energy consumption and costs. The Zero Carbon Resorts engages 3 R strategy (Reduce – Replace – Redesign), which enables hotels and resorts to adopt basic to advanced measures for better energy supply and consumption. See how you can easily reduce your current consumption, how you change your energy producing technology, to switch from fossil fuels to renewable energy in the most effective way and how you can design further resorts which are energy self-sufficient.

#### Conservation of the natural environment

You can reduce the carbon emission of your business, if the energy and resource consumption is reduced, and furthermore, if you utilize locally available renewable resources.

### Effective measures for guest behaviour change

Guests are often demanding and wasting energy and resources. We figured out (through a recent survey) where the preferences of your guests, related to energy services are. Sometimes your offered services even exceed their comfort level. Through the developed measures we may encourage your guests to change their (energy consumption related behavior) in a pleasant manner. The guest involvement measures of the ZCR project offer different approaches which depend on the derivation of the guests and the basic conditions of your resort.

### Free access to the ZCR knowledge

All those who are registered in the Zero Carbon Resorts website can utilize the online worksheet to monitor your energy consumption. In addition, registered users can have access to the handbooks (first volume already available in the website) and series of instructional video series which guide you throughout valuable set of information for the step-wise 3R approaches. The first volume deals with the reduction of the energy consumption in hotels and resorts. It contains a lot of solid advices how you may reduce energy consumption in the different areas of your business (kitchen, rooms, public areas, etc.) and also supportive materials to implement the measures.

### The Zero Carbon Resorts Homepage – database and forum

The member menu of the homepage [www.zerocarbonsresorts.eu](http://www.zerocarbonsresorts.eu) offers tourism SMEs to visit the expert forum where you can get expert advice for free. Furthermore the website contains a comprehensive database where you can monitor your company's energy consumption. This allows you to compare your energy performance with other resorts (anonymously). You may either serve as a motivating example for other resorts or you find out where you have the most improvement potential. Join the Zero Carbon Resorts and go green.

### How can SMEs join?

All tourism SMEs in the Philippine can still join the ZCR Project. Visit and register at our website at [www.zerocarbonsresorts.eu](http://www.zerocarbonsresorts.eu)  
For inquiries contact:  
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