Peak
Education

Skardu Hospitality Academy/Smart College and Ecotourist 4 star resort Based on 100% Renewable Energy - A GREEN PROJECT – Not-for-Profit

An eco-cycle model demonstrating integrated solutions for energy, waste, water and sewage, integrated land use, and sustainable building design – fossil fuels free – net zero carbon emission - off grid

Land donated by the local community to a non-profit foundation (Rangyul Foundation, Skardu) – 10,120 m2 (2.5 acres/20 kanals) – Katpana Cold Desert (Elevation 2,400 meters)

The entire complex consisting of

Hospitality Academy for 100 students & 25 staff	AREA 2,031 m2 (BTA)
Exhibition and event centre for 100 persons	AREA 914 m2 (BTA)
Resort/Hotel (4 stars), 20 rooms (max. 100 persons)	AREA 2,031 m2 (BTA)
Glass entrance hall for 75 persons	AREA 693 m2 (BTA)

LIST OF OBJECTS FOR PARTNERSHIP, SPONSORSHIPS AND DONATIONS

(for details, please consult the prospectus and the video)

Feasibility study

Hospitality Academy/Smart College

- Classrooms (10 rooms: 32 seats each, 74 m2/each)
- Auditorium (72 seats, 76 m2)
- Conference room (20 seats)
- Gym for male
- Gym for females
- Faculty lounge
- Several meeting and group rooms of various sizes (6 to 15 persons)
- Computer lab (56 seats)
- Canteen (180 seats)
- Kitchen

Exhibition and event centre

- Exhibition hall (100 seats, 200 m2)
- Virtual library (72 seats, 195 m2)
- Meeting and conference rooms of various sizes and meeting lounge
- Glass entrance hall

Resort/Hotel ****

- 20 rooms (max. 5 persons/room – 35 to 55 m2)
- Canteen (100 seats)
- Kitchen

Integrated solutions for energy, waste, water and sewage, etc.*

- Waste management system – Waste-to-energy plant
- Sewage and sanitation treatment plant
- Solar water filtration/treatment plant
- Waste recycling plant
- Biogas and biofuel production plant
- Solar panels (1150 m2 – output 500 000 kWh)
- Battery capacity (100 kWh LFP (Lithium Iron Phosphate)
- Solar thermal chimney (3 sets) – three-sided lantern with the fourth side glazed, opening at the top
- Solar road lamps
- Solar water heaters
- Solar water pumps
- Energy monitoring system
- Heat exchanger (3 sets)
- Small scale wind turbines
- Electric vehicle (1 EV)
- Electric buggies (8 seaters, 6 buggies)
- Smart Green house
- Trout pond

Peak Education will bring the latest state-of-the-art renewable energy technology and know-how to Pakistan

- **Solar PV/Solar thermal**: GB/Skardu has plenty of solar energy with high levels of solar irradiance is the cheapest form of energy. We are not using properly the solar energy. It can be used more efficiently not only for producing electricity, but also for solar water pumps for irrigation, solar water heating, solar water treatment to obtain clean drinking water to name the few.
- **Install Waste to Energy (WtE) plant, RDF – Refuse Derived Fuel, MSW – Municipal Solid Waste incineration** in the vicinity of the Skardu project with recycling facilities, garbage collection and zero landfills. This effort will require educating the local community around the ecotourist resort/hotel on waste management and building a robust logistics of collecting the garbage and other waste. WtE plant will benefit the local community around the project and also the entire city of Skardu.

Manufacturing in SEZs (Special Economic Zones) in GB

- Manufacturing of solar thermal chimneys and heat exchangers (for cooling/air conditioning and heating).
- Manufacturing of solar water pumps for irrigation, solar water heating, solar water treatment to obtain clean drinking water to name the few.
- Waste to Energy (WtE) equipment can be easily designed and manufactured in Pakistan, and can be also exported, creating tens of thousands of jobs and revenues for the government.
- Lithium-ion batteries for replacing the fossil fuels used in the transport, manufacturing and health sectors. Moreover, for storing the power produced by solar energy. We plan to bring the next-generation state-of-the-art lithium-ion battery manufacturing that is fundamentally different to conventional battery production facilities in Pakistan.

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***Note:** Most of the cutting-edge renewable energy and building material technology including R & D will be transferred from Europe, USA, Japan, South Korea and China. The payback period on renewable energy projects is usually 7 to 10 years. The life span of the green project is in between 20 to 30 years

Materials & resources

Materials will be selected based on the amount of recycled content and transportation distance. All products will be specified and meet a high standard that limit VOC (volatile organic compound) emissions from adhesives, sealants, paints, carpet and composite wood. For this project the building material could be made of site-cast concrete, to make a heavy structure that will keep the heat and counteract earth-quake vibrations.

Energy and atmosphere

The form of the building with a high solar chimney, is efficient from an energy standpoint. A carefully detailed envelope with little or no thermal bridging in addition means that the use of renewable energy resources as solar and snow will reduce the building energy dependence on fossil fuels. An energy monitoring system will increase the efficiency of systems.

Traditional cooling/heating system has been replaced by a heat exchanger in combination with an exceptionally well insulated construction. Solar collectors on the roof will provide the energy **needed for the supply of hot water.**

Building construction

Iternative 1: Roof: Masonite beams; External wall: framed construction (wood, engineered wood, or structural steel); Floor: concrete slab; Windows: three pane windows with two metallic coats and krypton or argon fill.

Alternative 2: Floor construction: Concrete (100 mm), polystyrene (350 mm); 200 mm macadam. External walls: 450 mm polystyrene and mineral wool. Windows are triple-glazed with low emission cooling and gas in between. Extensive use of Kenaf.

Green Certification

LEED (Leadership in Energy and Environmental Design) green building certification system will be used. This will create healthy, highly efficient, and cost-saving green buildings. Note: In order to be LEED certified, a facility must meet specific standards to demonstrate that it has taken significant steps to reduce water, energy, and fuel consumption, reduce the amount of waste it generates, as well as other steps to help reduce the facility's environmental footprint. LEED requirements also would include designing the building to protect natural resources.

WELL (WELL Building Standard Program). The WELL Building Standard® is a performance-based system for measuring, certifying, and monitoring features of the built environment that impact human health and wellbeing, through air, water, nourishment, light, fitness, comfort and mind.

GREEN GROWTH CERTIFICATE - Reaching global standards of sustainable and ethical excellence: Green Growth 2050 Global Standard is based on a range of internationally recognised environmental and hotel industry sustainability standards.

Peak Education Limited architectural and engineering partners

https://www.afconsult.com/en **&** **https://www.poyry.com/about-poyry**

AF and Poyry has merged together and formed AFRY (**https://afry.com/en**) with 17,000 engineers making them as the world largest engineering consulting company

&

TENGBOM **https://en.tengbom.se/portfolio**

(ranked as # 26 architect company in the world)

The project will be completed through various sources of funding including:

International and local organizations: Green Bonds (will be the first eco-touristic project in Pakistan to obtain Green Bonds); Grants for green project with climate action; Interest free long-term loans; Manufacturers and suppliers of renewable energy equipment; Sponsoring and donation

Following contributions have been made as of 28 April 2021

- **Land donated by the Skardu local community: 10,120 m2 (2.5 acres/20 kanals) – Katpana Cold Desert at an elevation of 2,400 meters**

- **Peak Education Limited has contributed: US$ 100,000 (>1.5 crore Pakistani rupees) for the following:**

  - ✓ Technical & Economic pre-feasibility studies
  - ✓ Environmental and social impact analysis
  - ✓ Booklet and posters
  - ✓ 3D model
  - ✓ Video (3 minutes)

3 D Model

Skardu Hospitality Academy/Smart College and 4 star Resort/Hotel **Prospectus**

COLD DESERT, KATPANA, GILGIT — BALTISTAN, PAKISTAN

An eco-cycle model demonstrating integrated solutions for energy, waste, water and sewage, integrated land use, and sustainable build- ing design – Based on 100% renewable energy.

Note: We are looking for 30 to 50 partners, who can provide sponsorship and make a donation in order to make this green project a success.

Contact us for becoming a supporter of Skardu green project