

CALL FOR PARTICIPANTS

FOR

Solar Powered Emergency Shelter Solutions
(SPESS) Open Innovation Competition

(EWG22–2015A)

September 1 to October 31, 2016

Organized by:

APEC Sustainable Energy Center (APSEC)

Tianjin University, China

Guided by:

APEC Secretariat

National Energy Administration, P.R. China



**Asia-Pacific
Economic Cooperation**



APEC Sustainable Energy Center

Content Outline:

1. Introduction to SPESS Project
2. Guideline for SPESS Open Innovation Competition
3. Registration Form

1. Introduction to SPESS Project

Catastrophes in our region — such as

- 2005 Hurricane Katrina,
- 2008 Earthquake in China's Sichuan province,
- 2010–11 Queensland Australia floods & 2011 Thailand floods,
- 2011 Great East Japan Earthquake and the ensuing tsunami,
- 2012 Superstorm Sandy in US,
- 2013 Super Typhoon “Haiyan” hitting eastern Philippines,

— are important reminders of the severe situation APEC community faces.

Accounting for 70 percent of all natural disasters, the Asia Pacific is highly prone to climate change impact. One of APEC 2015’s priority areas was “***Building Sustainable and Resilient Communities***”, and this project aims to foster cooperative efforts to strengthen APEC community’s energy-resilience and sustainability affected by natural disasters.

Conventional grid-based energy supply often experiences severe disruptions after disasters hit. Developing Solar-Powered Emergency Shelter Solutions (SPESS) contributes to building an energy-resilient APEC community through **secure and sustainable energy supply along with emergency sheltering** for disaster victims in dire needs during disaster relief period.

This project will establish **two workshops** to engage key APEC stakeholders/experts and an SPESS **open/crowdsource innovation competition** to tap into APEC community’s knowledge base for a more diverse perspective, culminating in the development of “***Recommendations on Deploying SPESS for Energy-Resilience in Disaster-Stricken APEC Community***”. The Recommendations will represent a humble step towards building sustainable and resilient APEC communities.



SPESS Project Key Contacts:

Name	Yang Yang	Yuqi Wang	Li Zhu
Role	Competition Organizer	Project Assistance	Project Overseer
Affiliation	APEC Sustainable Energy Center (APSEC)	APEC Sustainable Energy Center (APSEC)	APEC Sustainable Energy Center (APSEC)
Tel	(+86) 15522670151	(+86) 13752621877	(+86) 13920172808
Email	doublesunrise@126.com	yuqi_qiqi@126.com	zly_tj@163.com

2. Guideline for SPESS Open Innovation Competition

2.1 Submission Date and Address

- **Date:** September 1 to October 31, 2016
- **Mail submission address:** spess_2016@126.com
- **On-site submission address:** 216 Yifu Building, 92 Weijin Road, Nankai District, Tianjin city, P. R. CHINA, 300072.

2.2 Submission Documents

- Registration form. (seeing in section 3)
- Design proposal and brief introduction, etc.

2.3 Competition Theme

- Solar-powered emergency shelter solutions under Indonesia conditions
Facing problems: Volcanic eruption, flood, landslides, typhoons and storms and are common disasters in Indonesia.
- Solar-powered emergency shelter solutions under Peru conditions
Facing problems: Earthquake is one of the most frequent natural disasters in Peru.

2.4 Requirements of the work:

- The submitted drawing sheet should meet the requirements of scheme design level and should be accompanied with relevant technical drawings and technology data.
- Drawing and text should be expressed in clear and readable way. Mentioned data should be accurate.
- Participants choose sites themselves. Each house should develop on one or two floors with a total building area of 10-50m².
- The submitted work should include:



- ✓ A project description including the following facts:
 - Schematic concept design description;
 - Integration of solar energy technology, other building technologies and innovative design.
- ✓ Participants will provide site-plan, building plan of all floors, façade and section (scale is unlimited); Participants should provide detailed drawings (without limitation of scale) that illustrate the integration of technology in the architectural project, as well as any other relevant elements, such as tables, technical charts and diagrams that adequately communicate the proposal; and some rendering perspective drawings.
- ✓ Participants should arrange the submission into exhibition panels which is 841 mmx594 mm in size (arranged vertically).
 - File resolution: 300 dpi in JPEG.
 - Text requirement: The submission should be in English.
- ✓ Please use related professional glossary summarized in Annex 1.

2.5 Appraisal Standards

We strongly encourage governments, enterprises and individuals from APEC communities or other regions who are interested in presenting their ideas to participant in this competition and submit high quality works. All Solar-powered emergency shelter solutions collected from this competition will be presented and shared at the final APEC Workshop on SPESS to be hold in Tianjin on 3-5, November, 2016. We will discuss each work during the workshop and excellent work will be selected by participants and experts from APEC region. Excellent work will be displayed at SPESS Open Innovation Competition website and work with feasibility and deployable capacity will be also recommended to the APEC economies members by PO.

2.6 Attentions:



- **Women participants** are strongly encouraged to ensure the participation and engagement of both men and women in SPESS project activities, thereby addressing APEC value of gender equity.
- We are only offer an communication and showcase platform to the works submitted , thus we won't bear any legal responsibility for the work sources or other law behaviors caused by the submitted works. And the participants should be responsible for their works.

3. Registration Form

SPESS Open Innovation Competition (EWG22–2015A)

From Sep. 1 to Oct. 31, 2016

(NB the competition works will be presented in the final APEC Workshop on SPSS to be hold in Tianjin on 3-5 Nov., 2016)

Registration Form

Full Name	Economy	Organization	Address	E-mail	Tel.

***If it interests you,
you are very much welcome to contribute to & benefit from SPSS
project.
Let's work together to make SPSS another quality APEC project.***

SPSS Project as in APEC Project Database:

<https://aimp2.apec.org/sites/PDB/Lists/Proposals/DispForm.aspx?ID=1754>

SPSS Project as in APEC Meeting Document Database with Budgeting & Latest Work
Plan:

http://mddb.apec.org/Documents/2015/EWG/ERTF/15_ewg50_ertf_003.pdf



Annex 1.

Professional Glossary

- shutter ventilation
- thermal insulation
- passive solar energy utilization
- open system
- dehumidification system
- thermal storage
- water storage capacity
- through-draught
- area ratio of window to wall
- secondary entrance
- thermal conductivity
- lower energy consumption
- low temperature hot water floor radiant heating
- floor panel heating
- ground layer
- nominal working pressure
- wetproof layer
- freeze protection
- waterproof layer
- household-based heat metering
- remote storage system
- wind speed distribution
- closed system
- auxiliary thermal source
- accessory entrance
- heat insulating layer
- heat insulation window
- tracking collector
- photovoltaic system
- PV façade
- drainback system
- payback time
- instantaneous collector efficiency
- collector array
- central heating
- indirect system
- building energy saving rate
- building density
- building area
- index of building heat loss
- energy saving method
- quantity of energy saving
- close-coupled solar water heater
- economic analysis
- roller shutter sun shading system
- air collector
- air quality test (AQT)
- tridimensional virescence
- greening rate
- capillary radiation
- repairing room for woodworker
- permanent index
- energy storage & heat recovery system
- plane roof
- sloping roof
- forced circulation system
- heat pump heat supply
- heat metering device
- thermal stability
- thermal efficiency curve
- thermal pressure
- artificial marsh effect
- insulation standard
- floor area ratio
- triple co-generation
- design working life
- usable area
- indoor comfort level
- double façade building
- solar azimuth
- solar house
- solar radiant heat
- absorptance for solar radiation
- solar altitude
- solar fraction
- solar plus supplementary system
- solar cell



- solar collector
- solar driven desiccant evaporative cooling
- solar driven absorption cooling
- solar water heating
- solar chimney
- solar preheat system
- solar wall
- fill up layer
- ventilation simulation
- external windows insulation system
- differential temperature controller
- roof planting
- roof insulation system
- phase change material (PCM)
- phase change solar system
- phase change thermal storage
- thermal storage characteristic
- rain water collection
- schoolyard
- sunshading coefficient
- direct system
- duty room
- building intelligent control system
- atrium lighting
- main entrance
- heat storage tank
- preparation room
- quasi-steady state
- natural ventilation
- natural circulation system
- bike parking
- examination room
- payment
- rehabilitation ward
- involved care ward
- nurse station
- care unit
- treatment room
- acupuncture room
- massage room
- mechanical massage room
- prescription making up
- prescription making up for traditional Chinese medicine
- canteen
- kitchen
- storehouse
- locker room
- shower bath
- recovery room of movement function
- exercise area on the mat
- treatment and recovery room for hearing and speaking
- occupational therapy (OT) room
- library
- room for recreation, chess and cards
- smoking room
- electronic entertainment room
- office
- general office
- meeting room
- file room
- medical services