

# Role of Regional Center for Energy Efficient Lighting

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# Regional Center for Energy Efficient Lighting

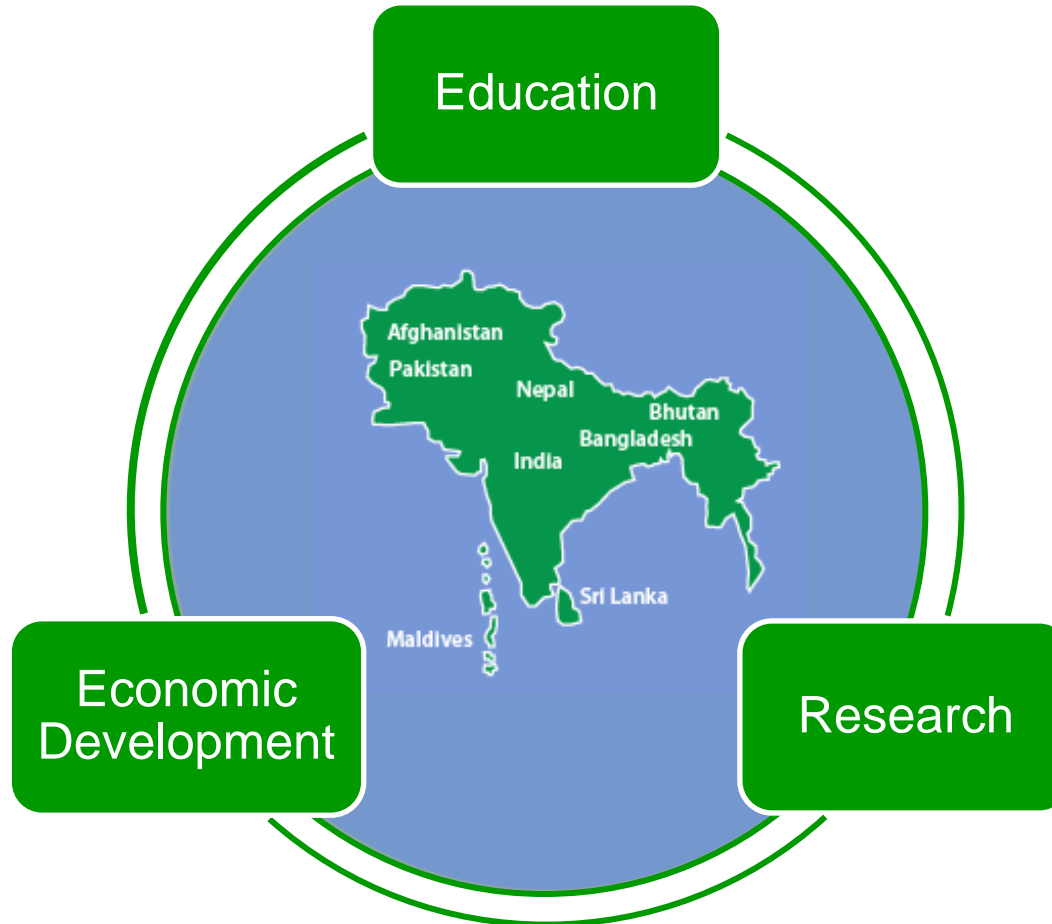
## Mission:

Advance **sustainable lighting** and make it **affordable** in South Asia to improve **well being** of the citizens and the countries in the region

# Needs

- ❑ Sustainable Lighting:
  - The 3 R's of sustainability: REDUCE, REUSE and RECYCLE
  - Energy efficient during production, transport, and use
  - Minimum toxic waste to the environment
  
- ❑ Affordable:
  - Cost effective (first cost and lifecycle cost)
  
- ❑ Well being:
  - Health, wealth, and knowledge

# Possible Activities for RCEEL



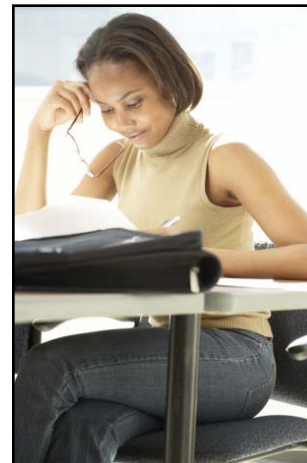
# Education

# Education

## □ Classroom education

- Grades 1 – 12
- Undergraduate
- Graduate

Providing future problem-solvers and leaders with a comprehensive understanding of the region's energy and lighting issues.



# Education

## □ Training

- Onsite training
  - ✓ Customized training for industries
- In-house short courses
  - ✓ Continuing education for professionals
  - ✓ Seminars
- Exhibitions / demonstrations



## □ Online education

- Webinars
- Online classes and training



# Education

## ❑ Fact sheets

- Mailed with electricity bills
- Point-of-purchase locations
  - ✓ Shops
  - ✓ Electricity bill paying locations

## ❑ Regular columns in newspaper

- Helpful hints for:
  - ✓ Lower lighting energy bills
  - ✓ Disposal of CFL lamps
  - ✓ Buying quality light bulbs

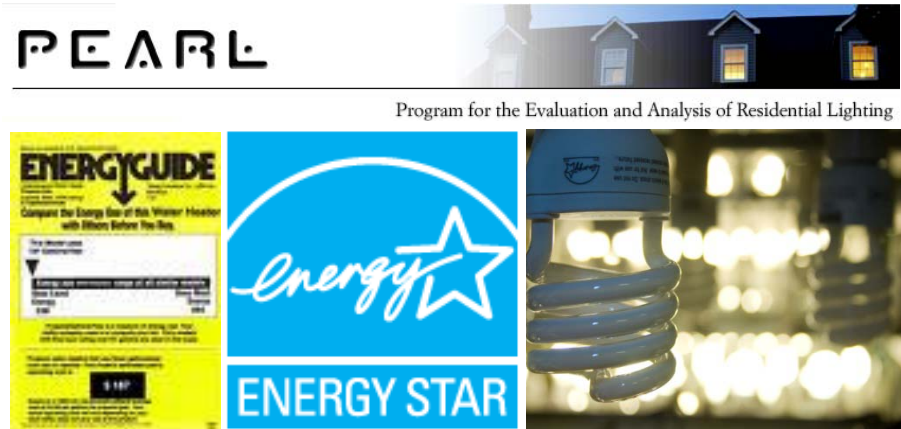


# Research

# Research

## □ Product testing

- Objective testing and evaluation
  - ✓ Quality assurance
  - ✓ Labeling
- Compare products side-by-side with common terms and language
- Knowledge resource for consumers and lighting decision makers



# Research

## □ Metrics and test protocols development

- Standardize test methods
- Quantify performance
- Identify and reduce major technical hurdles

**ASSIST** *program*



# Research

- ❑ Load research
  - Clear understanding of total load, magnitude and time is important for developing strategies for load reduction
  
- ❑ Informing demand side management (DSM) programs
  - Lighting is an end-use equipment that can address the needs of electric load management
    - ✓ Understanding performance characteristics of lighting fixtures, light sources, ballasts, and lighting control devices allows for selecting reliable quality products for DSM programs.

# Research

- ❑ New product development
  - Products that meet the quality and pricing needs of the region
- ❑ Case studies
  - Field evaluations and demonstrations of lighting technology and design
  - Allow for:
    - ✓ Performance quantifications
    - ✓ Application improvements
    - ✓ Real-world technology evaluations and comparisons
    - ✓ Recommendations for enhanced product performance and life



# Economic Development

# Economic Development

- ❑ Promote the growth and success of lighting-related businesses
  - Help to commercialize affordable lighting products and services that enhance sustainability and provide societal benefits
  - Act as an interface for businesses to facilitate the transfer of knowledge
- ❑ Create local industries for manufacture of energy-reducing lighting products
  - Creates jobs
    - ✓ Cottage industries to engage underrepresented communities
  - Lowers carbon footprint



# Economic Development

- ❑ Technical assistance for product development
- ❑ Potential products
  - Lighting fixtures for low- and mid-income families
    - ✓ LED light engines
    - ✓ Electronic circuit boards
    - ✓ Electronic drivers
  - LED torches and lanterns
  - Streetlights
    - ✓ Incorporate timers and daylight sensors
  - Affordable PV panels for rural homes
  - Components to combine grid power with locally generated renewable power (roof-top PV)



[www.trulyled.com/images/flashlight%20LED.jpg](http://www.trulyled.com/images/flashlight%20LED.jpg)



[img.alibaba.com](http://img.alibaba.com)



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# Economic Development

- ❑ Testing services for performance validation
  - Development of regional and international standards
    - ✓ Beneficial for manufacturers
  
- ❑ Business development services
  - Financing
  
  - Procurement of raw materials and components
    - ✓ Manufacturing products, such as LEDs, may require imports
    - ✓ Quality control of components is essential
    - ✓ Introductions to manufacturers outside the region may foster partnership opportunities
  
  - Negotiating tariffs for imports

# Economic Development

## □ Technology Transfer Process

### ➤ Address barriers

- ✓ Hold focus groups and roundtables to openly discuss issues and set research agenda

### ➤ Education

- ✓ Educate all the key players about the benefits, abilities and limitations of the technology/product and why it should be adopted

### ➤ Promotional Programs

- ✓ Can take many forms, such as utility incentive programs or endorsements

### ➤ Advocacy

- ✓ When there is public consensus of the use and benefits of the technology, advocates then request that the benefits of the technology be included in regulations, codes and/or standards



# Economic Development

## □ Technology Transfer Process

### ➤ Demonstrations

- ✓ “Show the world” that the technology works and delivers the promised benefits



### ➤ New product showcase

- ✓ Annual lighting show
- ✓ RCEEL facilities
- ✓ Retail showrooms



Scott Seligman/ Mesa Legend  
<https://www.mc.maricopa.edu/other/legend/ARCHIVES/vol44/vol44issue10/news4.htm>

# Funding

Funding is critical for a sustainable center

- **Membership programs**
  - ✓ Annual fee with certain common deliverables
- **Project based funding**
  - ✓ Donor
    - Link with existing development programs
  - ✓ State or private sector funding
    - Leveraged funding
- **Fee for service**

# Regional Center for Energy Efficient Lighting



RCEEL could become a model for regional collaborations to address the growing energy demand while improving the well being of citizens.