Instruction No. 66

No. p.6/3/2006-SEZ
Government of India
Department of Commerce
(SEZ Section)

Dated: 27th October 2010

Subject: **Energy Conservation in SEZs.**

Please see guidelines below on energy Conservation in Special Economic Zones for implementation.

This issues with the approval of Commerce & industry Minster.

Yours faithfully,

(G.Muthuraja)
Under Secretary to the Govt. of India

GUIDELINES ON ENERGY CONSERVATION IN SEZs

SEZs are special enclaves aimed at creating world class infrastructure. The guidelines and certification for SEZs is to be implemented as follows:

· Entire SEZ (proposed and under construction units) by developer/ co-developer

· In addition to the entire SEZ, the individual buildings would be addressed by owner/ developer, as applicable All individual buildings coming within the SEZ should also follow all the applicable green guidelines which can be implemented in such buildings. Individual buildings within the SEZ can also adopt appropriate rating programmes based on the building types:

· Residential (Developer)

· Commercial (Developer/ Owner)

· Factory buildings (Developer/ Owner)

· Schools (Owner)

Compliance with these guidelines would be certified by organisations like Indian Green Building Council (IGBC) www.igbc.in, Green Rating for Integrated Habitat Assessment (GRIHA) www.grihaindia.org, and other national & international agencies. SEZ developer/ co-developer can avail technical services from consultants, material & equipment suppliers.

Information of such consultants, suppliers can be obtained from IGBC.

(a) Optimization of Use of Energy:

(i) All new buildings within SEZ should be energy efficient as per the Energy Conservation Building Code (ECBC), 2008.

Note: Process loads for industrial buildings are excluded.

a. Envelope, Cooling, Heating and Lighting would comply with the ECBC requirements

b. For such of those building types (factories, homes, schools, etc.,) not addressed by ECBC, projects would comply with requirements of appropriate IGBC rating programme or other equivalent programmes.

(ii) For SEZs where the air-conditioning requirements are equal to and above 5,000 TR capacities should be catered through district heating and cooling. SEZs coming up in a phased manner with a load more than 5,000 TR capacity, would also plan and design for district heating & cooling.

Note: This is applicable to projects wherein the air-conditioning systems are installed by the SEZ owner/ developer/ co-developer.

(iii) The following measures may be considered for improving micro climate to avoid heat island effect:

a. 50% of the net roof area covered with vegetated roof (OR)

b. 75% of the net roof area installed with high Solar Reflective Index (SRI) material (OR)

c. Combination of above (75% of net roof area)

Note: Net roof area excludes all service areas (such as plant room, lift room, AHU room, etc.,), area covered by solar systems, sky lights and other similar functional areas.

(iv) Provide centralised and independent unit metering systems to monitor energy and water consumption for ongoing accountability.

(b) Power Utilization:

(i) 100% of organic waste generated within SEZ should be used for in-situ power generation or vermi-composted, as applicable. This can be installed at a centralized location or have multiple individual installations.

Alternately, organic waste generated should be appropriately sent to projects/ vendors for power generation, vermi-composting or other relevant usage.

(ii) External Lighting in common spaces (street lighting, path ways, parking areas, landscaping, traffic light blinkers and direction signages, where there is no requirement of lighting for reading purposes), may comply with the following:

a. Atleast 10% of the installed load should be solar powered during the first year of operation. Over a period, the installed load must be extended by atleast 5% annually until a target of 50% is achieved.

b. Atleast 10% of external lighting load in common spaces shall use 'LED'

c. Atleast 50% of external lighting load shall be installed with luminaries having atleast BEE 3 star rating or equivalent.

Note: The usage of incandescent lamps is not allowed.

d. All street lights shall be installed with automatic dusk to dawn controls

(iii) Internal Lighting in common spaces (foyers, stair case, corridors, etc.,) if in the scope of the developer, should comply with the following:

a. Atleast 10% of internal lighting load in common spaces should use 'LED'
b. Atleast 50% of the load should be installed with luminaries having atleast BEE 3 star rating or equivalent.
Note: The usage of incandescent lamps is not allowed.
(iv) Units are encouraged to achieve a minimum of 2% of total estimated energy consumption for each zone or 5 kW/ hectare, whichever is lower, should be generated in-situ through solar or building integrated photovoltaic or other forms of renewable energy. Over a period of 10 years, the aim is to see that the solar/ other forms of renewable energy be extended from 2% to a minimum of 20% of total estimated energy consumption or 50 kW/ hectare (equally staggered in a block of 3 years), whichever is lower.
a. In-situ systems should be located along the boundary wall of the processing area and open spaces/ roof tops, within the Zone. For this purpose, developers will have flexibility to use 10% of non-processing area beyond the limits prescribed, for any authorised operations
b. Alternatively, SEZ projects can also enter into Power Purchase Agreements (PPAs) with renewable energy developers to meet this requirement.
(v) For projects in SEZs having non-industrial hot water requirement, atleast 50% of hot water should be met by solar water heating systems.

(c) Water Efficiency:
(i) Water harvesting practices should be used in each Zone by developer/ co-developer such that atleast 25% of the site run-off is harvested/ captured, depending on the aquifer characteristics. Design harvesting system to capture/ percolate atleast 2-3 days of discharge.
Note: Run-off is calculated based on 24 hour preceding 2-year peak rain fall discharge
(ii) Protect or restore the existing water bodies to promote bio-diversity.
(iii) Install centralised in-situ sewage waste water treatment plant (for both building and domestic) to treat 100% of waste water generated to tertiary standards as per State or Central Pollution Control Board norms, whichever is more stringent.
For industrial effluents, the individual units have the primary responsibility to treat the effluent to meet the State or Central Pollution Control Board norms, whichever is more stringent. Common effluent treatment plant can also be explored, if possible.
(iv) Re-use treated waste water for landscaping, flushing and cooling tower make-up requirements within the site.
(v) Developer/ Co-Developer shall be responsible for providing water supply and no separate individual borings will be permitted for any use in any processing area.

(d) Waste Management:
(i) Developer should provide centralised collection & storage area for recyclable waste such as paper, glass, metal, cardboard, plastics, e-waste & organic waste, as applicable.
Also, developer should identify/ appoint local vendors to handle (segregate & collect) and divert waste from both individual units & centralised collection area to reuse and/or recycle.
Note: Individual units must segregate recyclable waste.
(ii) SEZs with industrial units should have centralised or unit dependant primary treatment facilities to treat industrial solid waste (hazardous & non-hazardous) in accordance with State/ Central Pollution Control Board norms, whichever is more stringent.

(iii) Garbage segregation should be as per Solid Waste Rules of 2000.
(iv) Have a system in place to segregate waste during construction and subsequent reuse or recycling.

(e) Plantation:
(i) The Developer/ Co-developer for Zones greater than 50 acres should set up their own nurseries for plantation of saplings. For Zones less than 50 acres, developer may share the neighboring SEZs nurseries or tie-up with established nurseries in the vicinity, if available.
(ii) Plantation should be native/ adaptive (drought tolerant).

(f) Site Preservation and Restoration:
(i) Prevent construction activity pollution by controlling soil erosion and sedimentation as per National Building Code (NBC) 2005 guidelines. Stack the top soil and reuse for landscaping, wherever applicable.
(ii) Preserve or transplant existing trees, wherever appropriate as per local bye-laws.
(iii) Atleast 50% of the open area should be landscaped to reduce heat island effect.
Notes:
a. Open area = Total area – Development foot print Development foot print includes building foot print, multi-level car parking, service areas, roads and other similar areas.
b. Vegetated roofs can also be considered as landscaped areas.
c. Potted plants cannot be considered as landscaped areas.
(iv) Atleast 30% of non-roof hardscape areas to be either shaded by trees or installed with open-grid pavers.
(v) Provide recreation facilities such as parks, open-air theatres, plaza, etc., to enhance the quality of life of the occupants.

(g) Local Internal Transportation:
(i) Each Zone should have its own internal transportation facilities (wherever internal transportation is required), to cater to atleast 10% of the permanent occupants through low emission vehicles such as electrically driven vehicles/ electric rickshaws or Compressed Natural Gas (CNG), Bio-diesel or any other environment friendly fuel driven vehicles. The facilities should be created as per the need assessment of the Zone by Unit Approval Committee.
(ii) Developer/ co-developer/Units to provide for facilities for more than 50% of parking requirement either in multi-level car parking or building basement, to reduce heat island effect. For remaining requirement of parking, other methods can be adopted.
(iii) Facilitate proximity to alternative modes of local mass transportation (rail and/ or bus). In the event of such facilities not being available, provide shuttle services to the nearest rail or bus services.
(iv) Provide bicycle lanes and exclusive bicycle parking facilities to encourage occupants to cycle within the SEZ.
(v) Provide exclusive lanes for comfortable pedestrian street access within SEZ.
(vi) Provide high level of internal connectivity through street network within SEZ.
(vii) SEZs should be provided with basic amenities such as banks, ATM's, restaurants, super market, clinic/ hospital, pharmacy, stationary, etc., to improve occupant comfort and minimise transportation.

(h) Materials:
It is recommended that each building in the zone should identify and source materials (only civil and interior materials such as bricks, concrete, tiles, gypsum, etc.,) from nearby areas. As far as possible atleast 20% materials by value are regionally sourced (within a radius of 500 km).

(i) Indoor Air Quality in Individual Buildings:
(i) Provide fresh air for ventilation in air-conditioned buildings as per ASHRAE standard 62.1-2007 For un-conditioned buildings, provide openings (window/ doors) equal to or greater than 10% of the net occupiable floor area.
(ii) Use paints, coatings, adhesives & sealants with low VOC content.
Note: For VOC limits, please refer IGBC Green SEZ Rating Abridged Reference Guide (Pilot version).

(j) IT Infrastructure:
(i) Each Zone should have Optical Fiber Connectivity (OFC) to provide efficient internet and broad band connectivity to the units by the developer/ co-developer.

(k) SEZ Green Guidelines Compliance and Certification Process:
(i) The entire SEZ should be designed as per the Green SEZ guidelines. Alternately, SEZ as a whole can opt for IGBC SEZ rating system in which case they would be deemed to have met the green SEZ guidelines.
(ii) Individual buildings within the SEZ should adopt all green guidelines applicable to such buildings. Alternately, such buildings can opt for green building certification, in which case, they would be deemed to have met the green SEZ guidelines.
(iii) Certified buildings in the SEZ should renew the certification every 3 years from the date of certification.
(iv) Projects by developer/ co-developer can opt for pre-certification.
Note: Precertification is an option provided for projects aspiring to get pre-certified at the design stage. This gives the developer/ co-developer a unique advantage to market the project to potential buyers.
(v) Compliance with the above guidelines would be certified by organisations like Indian Green Building Council (IGBC) www.igbc.in, Green Rating for Integrated Habitat Assessment (GRIHA) www.grihaindia.org, and other national & international agencies.
(vi) For support required on process and funding of renewable energy activities, approach MNRE. Applications shall be forwarded by the Zonal DC to Joint Secretary, Ministry of New and Renewable Energy, Govt. of India, Block no. 14, CGO complex, Lodi Road, New Delhi 110003 (Tel. No. 011-24361027, Fax No. 011-24367413) who will get them approved and communicate the same to the DC and will also disburse the fund to the developer and the unit.