



GBI
PROFESSIONAL
SERIES 2016



NEW GBI INCENTIVES UPDATES & GREEN COST CALCULATION

29th Mar 2016

Qualifying CAPEX (QE) on M&E Items

29th Mar 2016

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Income Tax Allowance

What are the eligible Green Cost items ?

(incremental capex costs)
(must score GBI criteria point)

GBI Green Cost Items

Part	Criteria	Description (NRNC)
1.1	EE	Energy Efficiency
	EE1	Sun shading devices including automatic controls
	EE1	Sandwich walls; Additional insulation
	EE1	Roof insulation
	EE1	Wall insulation
	EE1	Cavity brick walls
	EE1	Low-E glass of various thickness
	EE1	Double glazing of various thickness
	EE1	Energy Management System

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.1	EE	Energy Efficiency
	EE2	Daylight auto sensor devices for lighting control
	EE2	Motion sensor devices for lighting control
	EE3	Electrical sub-meters for EE monitoring
	EE4	RE such as Fuel Cells, Biomass, Hydro, Wind, Geothermal etc
	EE4	BIPVs and PVs (not under FiT program)
	EE4	Solar powered application viz STC
	EE5	EE HVAC Equipment
	EE5	Enhanced HVAC systems such as TES, DCS, Cogen etc

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.1	EE	Energy Efficiency
	EE5	Enhanced HVAC technologies/ strategies viz UFAD, chilled slabs/ ceilings, Active/ Passive chilled beams, etc
	EE5	High Performance Glazing/ Walls
	EE5	EMS integrated to enhance EE Performance
	EE5	EE light fixtures
	EE5	Heat Pumps, Heat Machines
	EE5	Gas/ Solar Water Heaters
	EE5	Geothermal Heating/ Cooling

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.1	EE	Energy Efficiency
	EE5	Hot Water Heat Reclaim System viz Desuperheater System
	EE5	Variable Speed Drives
	EE5	High Efficiency Motors

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.2	EQ	Indoor Environmental Quality
	EQ3	CO ₂ Monitoring & controls for EE & IAQ
	EQ4	Low VOC products
	EQ6	Additional controls and devices to enhance thermal controllability, viz VAV terminals
	EQ7	UFAD system, Dedicated work-station air supply system, LLD/TDV system
	EQ8	Light Shelves for Daylight Harvesting

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.2	EQ	Indoor Environmental Quality
	EQ8	Double Skin Façade, Low Emissivity Glass, DGU, IGU, High Performance Glazing
	EQ9	Automated blind control, double glazing with sandwiched blinds, automated louvres
	EQ11	High Frequency Ballasts and Luminaries
	EQ13	Acoustic ceilings and internal partition/ wall insulation
	EQ14	Permanent air flushing system

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.3	SM	Sustainable Site Planning & Management
	SM2	Decontamination costs
	SM4	Restoration or protection of existing native cultivars
	SM9	Costs incurred in reserving carparks for green/ hybrid vehicles - additional signages and line marking
	SM12	Green Roof
	SM12	High Albedo Paint (Paint with suitable SRI) to obviate heat island effect
	SM12	Green Walls
	SM12	Pervious Pavers/ Open Grid Pavers

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.4	MR	Material & Resources
	MR1	Reused materials
	MR2	Materials with Recycled Content
	MR4	Sustainable timber
	MR5	Provision of Recycling Facilities/ bins/ balers; and signages
	MR7	Refrigerants and fire suppression (clean) agents (not eligible for CAPEX)

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.5	WE	Water Efficiency
	WE1	Rainwater Harvesting System
	WE2	Black Water Recycling System
	WE2	Grey Water Recycling System
	WE3	Water Efficient Fixtures & Flow Restrictors, automatic rain sensors and devices
	WE4	Waterless Urinals or Low Flushing fixtures (WC's with less 4.5 & 3 litres)
	WE5	Water sub-meters for monitoring and leakage

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.6	IN	Innovation
	IN1	Solar Thermal Technology viz STC
	IN1	Solar Light/ Tube Systems
	IN1	Heat Pipe Technology
	IN1	Heat Recovery System viz Heat Wheels
	IN1	Regenerative Lifts and Sensor Controlled Escalators
	IN1	Non-Chemical Cooling Tower Water Treatment System
	IN1	Auto-condenser tube cleaning system
	IN1	Advance Air Filtration technology

GBI Green Cost Items cont'd

Part	Criteria	Description (NRNC)
1.6	IN	Innovation
	IN1	Central Pneumatic Waste Collection System
	IN1	Central Vacuum System
	IN1	Refrigerant leakage and recycling facilities
	IN1	Condensate Water Harvesting
	IN1	Recovery pipe for Fire Testing water (sprinkler system)
	IN1	Active Facade

GBI Tax Allowance

**What are the claimable (M&E) items ?
(including Innovation items)**

What is the claimable (incremental) cost benchmarked against ?

What is Reference Base Cost ?

GBI Green Cost M&E Items

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC ACMV				
AC System	EE4,5; MR7; IN1	Total Plant <u>System</u> incorporating TES, Chilled Slab/ Ceiling, STC, Cogen	Total <u>System</u> Cost of Water-cooled CHW plant with CAV Air Distribution System	Incremental cost to be based on entire plant system. If claim is on this item then not eligible for separate similar ac equipment claim

GREEN COST CAN ONLY BE CLAIMED WHEN AT LEAST ONE CREDIT SCORE IS AWARDED FOR THAT CRITERIA

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC ACMV				
Air Distrib System	EE5; EQ6,7	VAV, UFAD, LLD/TDV, Active/ Passive Beams	CAV System	Incremental cost to be based on entire air distribution system. If claim is on this item then not eligible for separate similar component claim

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC ACMV				
Cooling Plant/ Eqpt	EE5	DX ACPU and WCPU	Minimum COP in MS 1525	Compare 'Like to Like' eqpt; viz WCPU to WCPU
	EE5	Absorption Chiller	Electric Chiller with min. COP in MS 1525	
	EE5	Chiller/ Unitary AC	Min. COP in MS 1525	Compare 'Like to Like'
	MR7	HFC, HFO, Natural Refrigerants	HCFC	Not eligible for CAPEX

GBI Green Cost M&E Items cont'd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC ACMV				
Other Eqpts & Accessories	EE1	Energy Management System	Base EMS installation	100% claimable if ac space < 4000 m ² . Otherwise, only the additional cost apply
	EE5	VSD	Nil	100% claimable
	EQ3	CO ₂ Sensor & Monitoring	Nil	100% claimable
	IN1	Heat Pipes	Nil	100% claimable
	IN1	Heat Recovery Wheels	Nil	100% claimable

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC ACMV				
Other Eqpts & Accessories	IN1	Non-Chemical Cooling Tower Water Treatment System	Conventional Chemical Water Treatment System	
	IN1	Refrigerant Leakage Detection & Recycling Facility	Nil	100% claimable
	IN1	Advance Air Filtration Technology	Conventional Washable Air Filters	
	IN1	Auto-condenser tube cleaning system	Nil	100% claimable

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC ACMV				
Mech Ventn	EQ14	Permanent Air Flushing System	Smoke Spill System	100% claimable only where Smoke Spill System is not required by Bomba

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC Electrical System				
Lighting	EE5	T16/T5 Fixtures	T26/TL8 Fixtures	Rapidly decreasing incremental cost
	EE5	TC/CFL	Incandescent equiv	
	EE5	LED	Incandescent or T26/TL8 equiv	
	EE5; IN1	Solar Powered Light Fixtures	Electric Powered Fixtures	
	EQ11	Electronic Ballasts	Electromagnetic Ballasts	
	EE5; IN1	LED for Façade Lighting	Base Design (PAR or HID Lamps)	

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC Electrical System				
Others	EE2	Occupancy/ Motion Sensors	Nil	100% claimable
	EE2	Photo Sensors	Nil	100% claimable
	EE3	Electric Sub- metering	Base sub- metering	Cost of additional EE monitoring meters for GBI compliance
	EE4	PVs (non FiT)	Nil	100% claimable
	EE4	BIPVs	Base roofing	
	EE4	Other RE devices	Nil	100% claimable
	IN1	Solar Light Pipes/ Tubes	Nil	100% claimable

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC Elevators & Escalators				
Lifts	EE5	ACVVVF Gearless Lifts	ACVVVF Geared Lifts	Applicable only if Geared Lifts are available for the installed capacity
	EE5; IN1	Regenerative Lifts or equiv	ACVVVF Geared Lifts	If Geared Lifts are not available for the installed capacity then Gearless apply
Escalators	EE5	Variable Speed/ Auto Start Stop or equiv Escalators	Single Speed Escalators	

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC Hydraulics System				
Plumbing System	WE1	Rainwater Harvesting System	Nil	100% claimable (excl base gutters etc)
	WE2	Grey Water Recycling Sys	Nil	100% claimable
	WE2	Black Water Recycling Sys	Nil	100% claimable
	WE3	WE Irrigation System	Conventional Base Design	
	WE5	Water Sub-metering	Nil	100% claimable for GBI compliance

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC Hydraulics System				
Plumbing System	EE5	Gas Instantaneous Water Heater	Electric Instantaneous Water Heater	
	EE5	Electric Heat Pump/ Machine Hot Water System	Electric Storage Hot Water System	
	EE5	Hot Water Heat Reclaim System	Electric Storage Hot Water System	
	EE5	Solar Hot Water System	Electric Storage Hot Water System	

GBI Green Cost M&E Items contd

Service	Criteria	Green Item	Ref Base Cost	Remarks
NRNC Others & Innovations				
Motors	EE5	Eff1/IE3 Motors	Standard Motors	
Innovation	IN1	Central Vacuum System	Nil	100% claimable
	IN1	Central Pneumatic Waste System	Nil	100% claimable
	IN1	Condensate Water Harvesting	Base Condensate Water Piping	Associated Additional Cost
	IN1	Recycled Fire System Piping	Nil	100% claimable

GBI Green Cost Items

NOTES:

- **This list is not exhaustive and serves as a guide for items not included.**
- Clarifications are welcome before submission.
- **Green Cost submission can only be done after CVA stage.**

Equipment and materials qualifying for green cost need to be listed with Greentech's MyHjau Mark



THANK YOU

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