



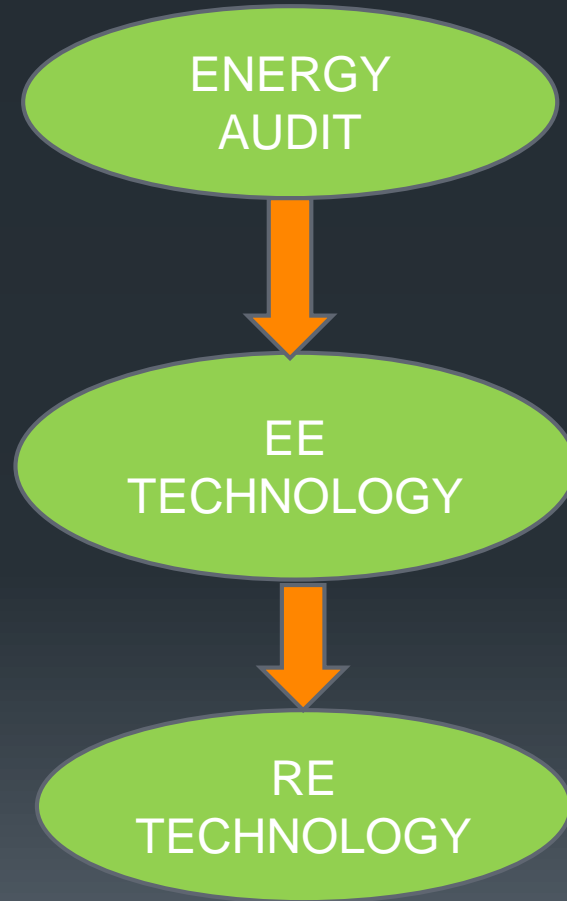
# EU CARIBBEAN SUSAINABLE ENERGY CONFERENCE

## Session 2.1

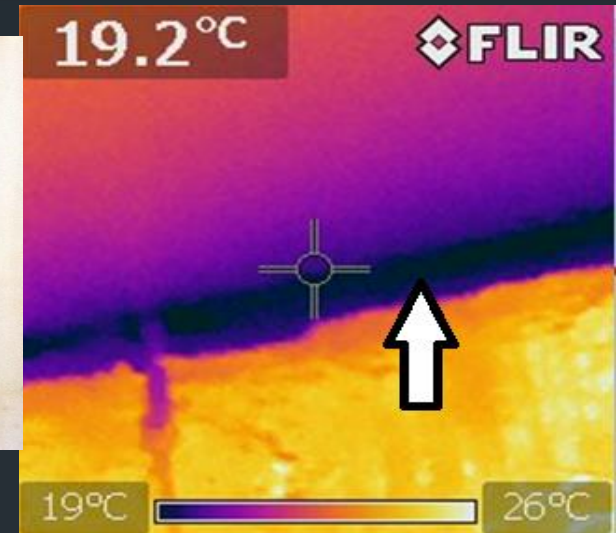
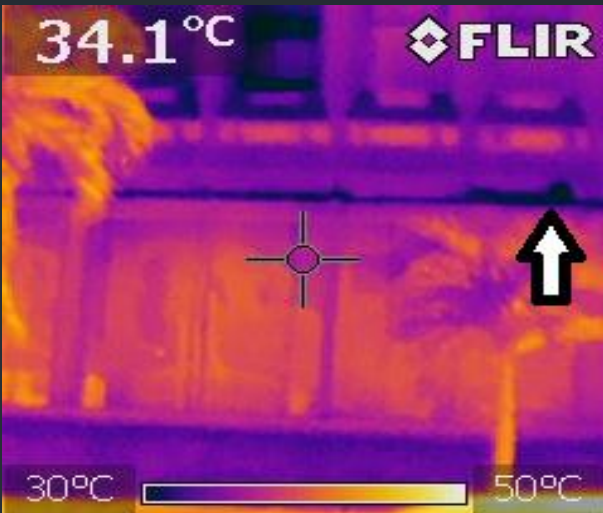
Energy Services & Energy Efficiency

EE as a Forerunner to RE

# AGENDA



# Energy Audit – Low Cost / No Cost



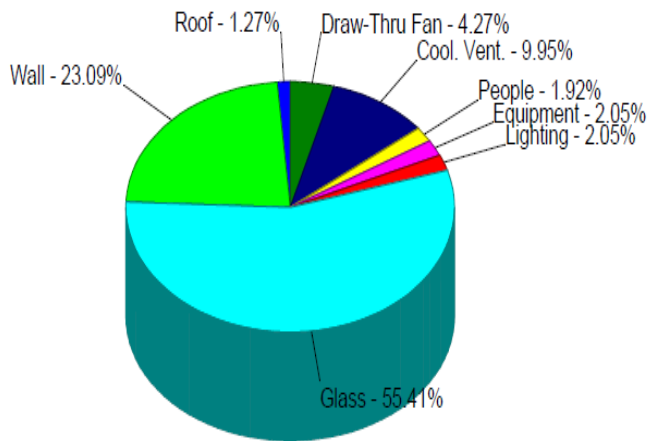
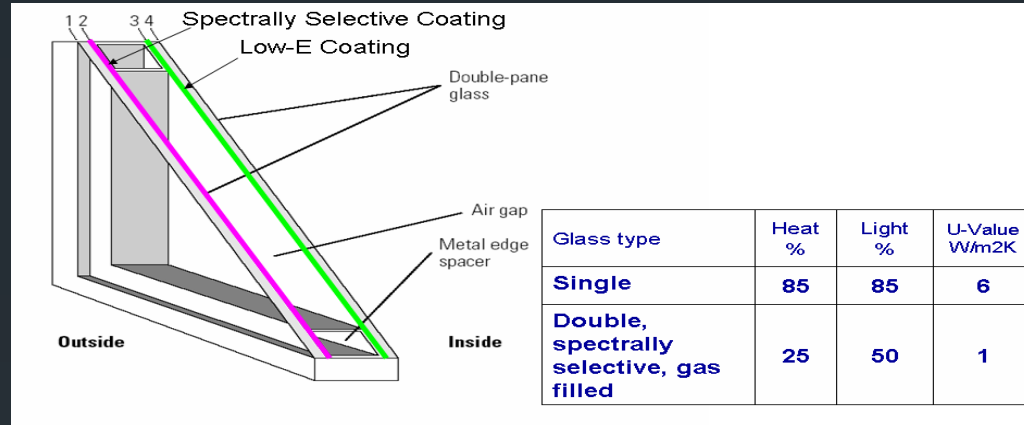
Low Cost / No Cost	Action
Infiltration	Properly Seal Building
Ventilation	Adequate TAB
Lighting	Measure Illumination & adjust

# EE as a forerunner to RE – EE LIGHTING & APPLIANCES

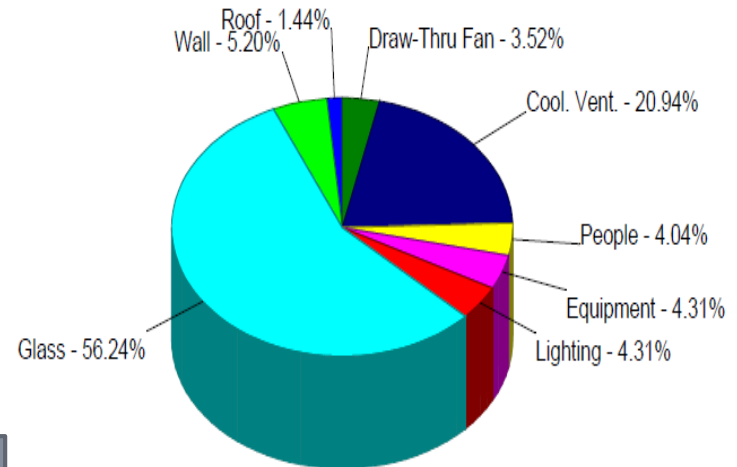
- A 5 W LED bulbs can replace a 40 W Incandescent (8 W CFL).
  - **PV for 40 W Incandescent bulb will cost US\$ 100**
  - **PV for 8 W CFL will cost US\$ 20**
  - **PV for 5 W LED – US\$ 12.5**
- Using EE Lighting also reduces the Air Conditioning cooling load
- Energy Efficient Appliances (Energy Star).



# EE as a forerunner to RE – Insulation & EE Glazing



Before



After

# EE as a forerunner to RE – Air Conditioning

Type	Capacity / room Tons	Power - kW / ton (12k Btu)	50 Room Hotel – Total Power (kW)	Solar PV Cost – US\$ 2,500 / kW	Ann. Energy Use (kWh)
<b>STANDARD HOTEL ROOM - No Insulation, No Low E Glass, No EE Lighting</b>					
Mini-split	1.0	1.15	57.5	143,750	3,525
Inverter	1.0	0.9	45	112,500	2,760
VRF	1.0	0.9	38.25	95,625	2,345
<b>HIGH EE ROOM</b>					
Mini-split	0.8	1.15	46	115,000	2,450
Inverter	0.8	0.9	36	90,000	1,920
VRF	0.8	0.9	30.6	76,500	1,631

# TAKEAWAYS



- An Energy Audit is important to identify amongst others the Low Cost / No Cost EEM
- Implementing the Low Cost / No Cost EEM can reduce the cost of both the purchase of EE Lighting and EE Air Conditioning
- Implementing EE as a forerunner to RE will reduce the initial and operational cost of a RE Project (cost of both PV and storage).