



Bureau of Energy Efficiency



सत्यमेव जयते  
Government of India  
Ministry of Power



**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

# ANGAN

## Augmenting Nature by Green Affordable New-habitat

A Courtyard for Revolutionary Change in Building Energy Efficiency  
An International Conference on Building Energy Efficiency

9<sup>th</sup>-11<sup>th</sup> September, 2019 | Hotel The LaLIT, New Delhi





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THIS PRESENTATION WAS SHARED BY

**Mr. Kanagaraj Ganesan**

Founder and Director, Integrative Design Solutions Pvt. Ltd., New Delhi

FOR THE SESSION:

*“Entrepreneurship & Innovative Business Models”*

DURING ANGAN 2019

Knowledge Partner

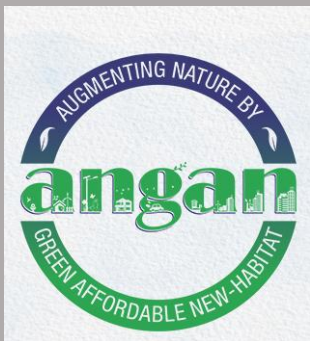


Event Partner





Integrated  
Station for Energy & Environment



Powered by –



Presenter:  
Kanagaraj Ganesan  
Director, Integrative Design Solution Pvt. Ltd. (IDSPL)

# ISEE – Integrated Station for Energy and Environment

## Evidence Based Informed Decision Making

- Policy Development, Implementation and Monitoring
- Design, Construction and Operation of Built-Environment

## Nexus between Energy and Environment Parameters

### Enabling collaboration among stakeholders

- Central, State, Local Government
- Public and Private

## Key Drivers that support ISEE

- Data acquisition has become affordable
- Computation power has increased exponentially and has become affordable
- Connectivity has increased



# Our Products



ISEE –  
ENERGY



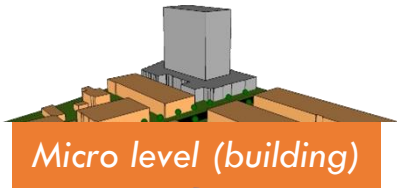
ISEE –  
WATER



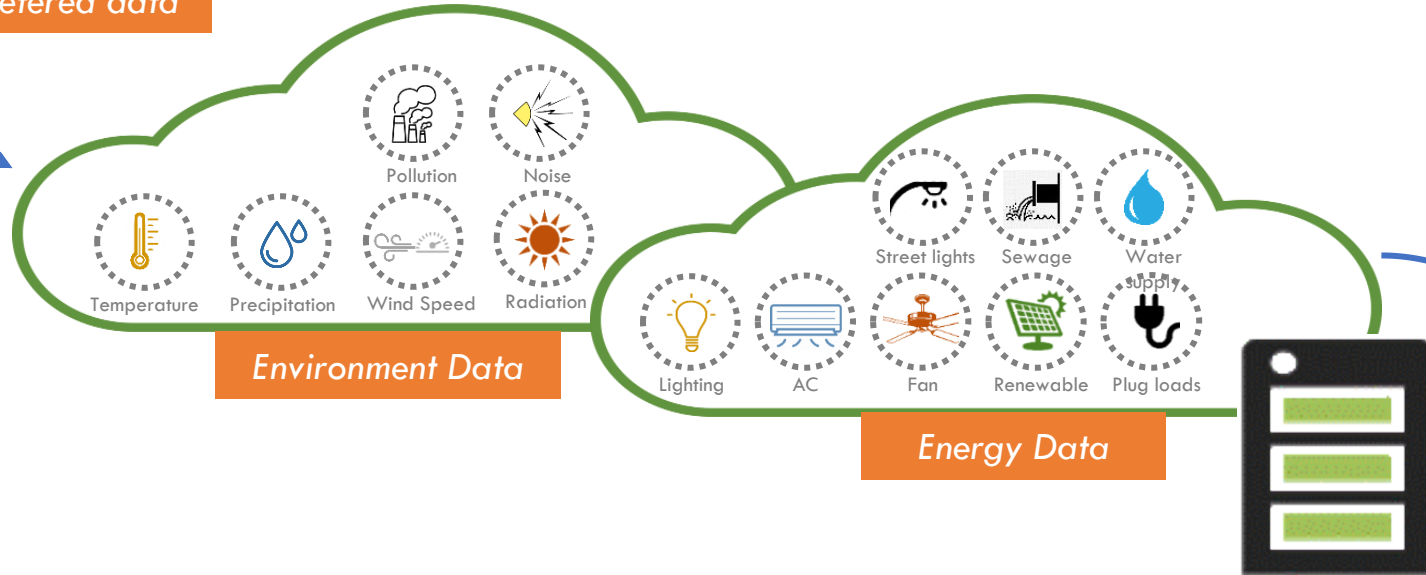
ISEE –  
ENVIRONMENT



# Granularity of Data Acquisition



Collect Metered data



ISEE Platform



Data Analytics



# ISEE – Energy: Implementation Models

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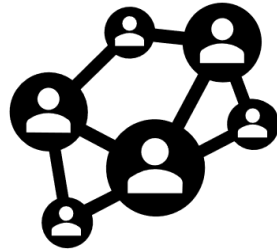
**Building Energy  
Optimisation**

**Geo-visualisation**

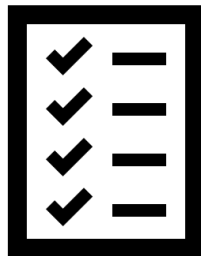
**Data driven Policy  
Development**



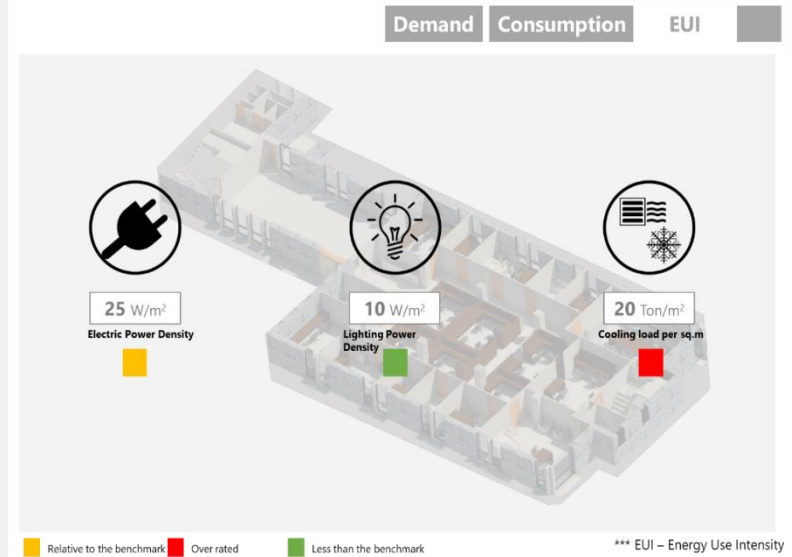
# Building Energy Optimization



*Rulesets and alerts for Facility Management team*



*Predictive maintenance and asset management*



*ISEE Platform*



# Building Energy Optimisation Outputs

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## Energy Data

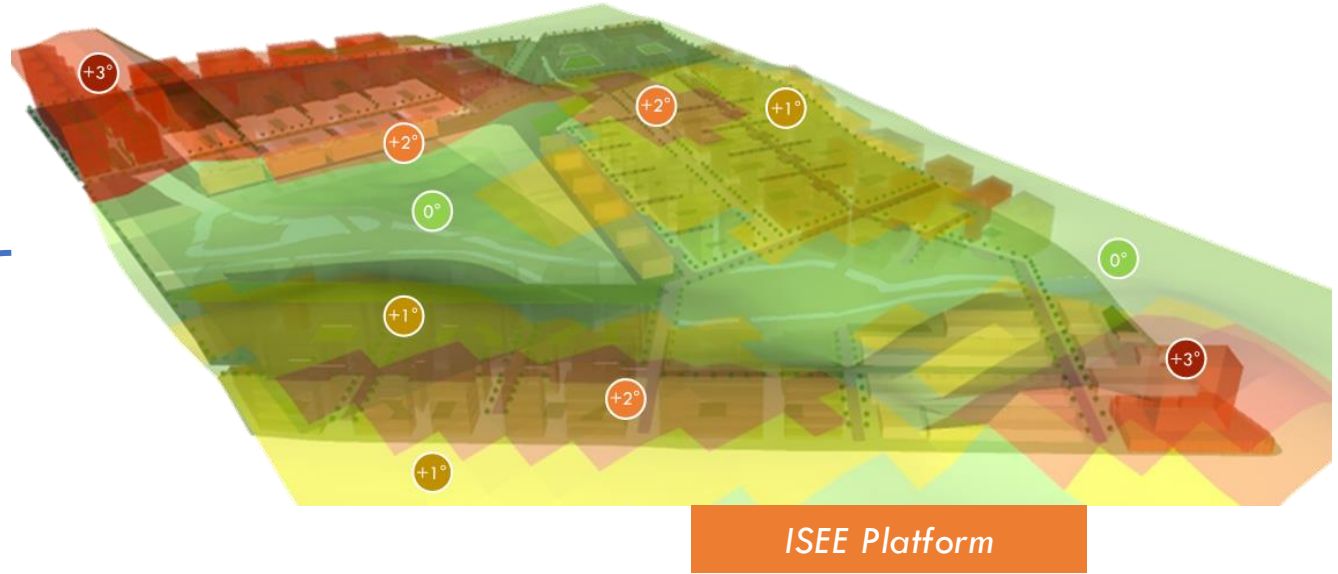
- Retrofitting strategies
- Demand side management strategies
- Renewable energy management strategies
- Passive technologies integration strategies
- Life cycle cost analysis
- Predictive maintenance and asset management

## Environment data

- Climate assessment
- Passive architecture integration strategies
- Climate change vulnerability analysis
- Building energy simulation weather file generation
- Climate and end use consumption correlational analysis



# Geo-visualisation



Evidence-based Policy



# Geovisualisation Outputs



## Energy Data

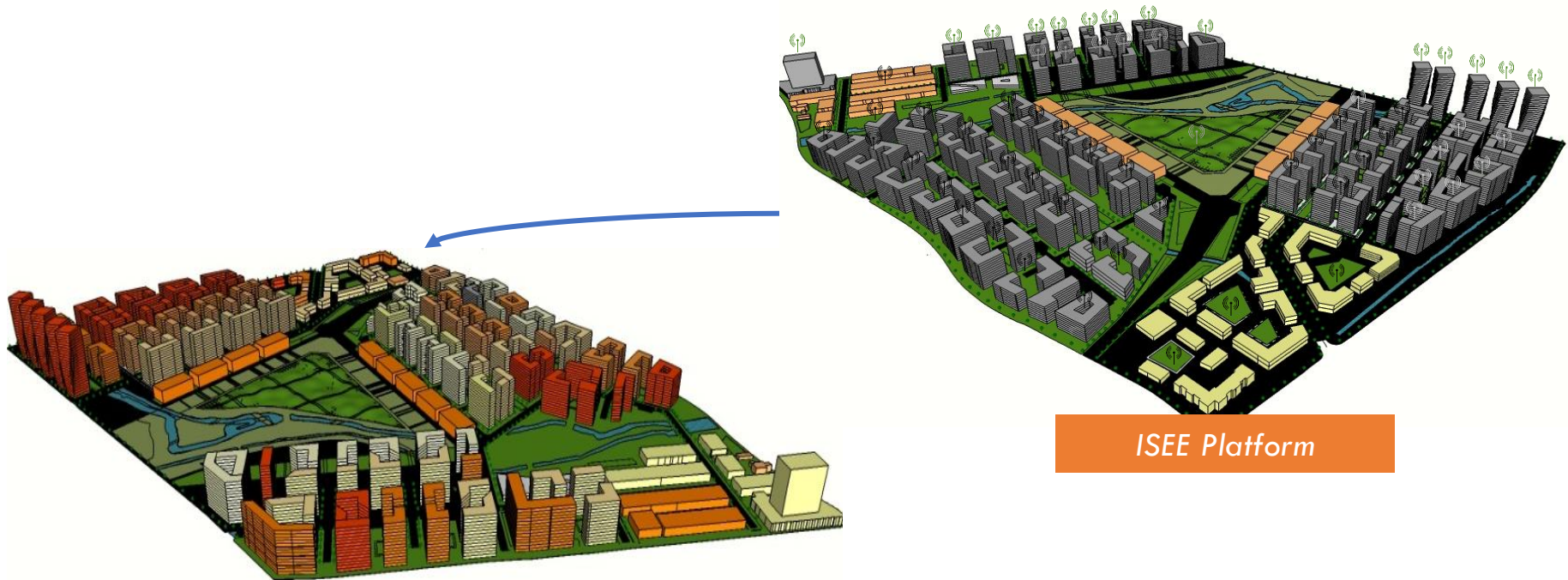
- Mapping of energy scenarios (consumption, demand, usage pattern)
- Mapping of renewable energy scenarios (generation, consumption, transmission, surplus)
- Prepaid metering
- Market – based incentives

## Environment data

- Mapping of urban heat island
- Mapping of pollutants ( $\text{CO}_2$ ,  $\text{CO}$ ,  $\text{PM}_{2.5}$ ,  $\text{PM}_{10}$ , and others)
- Microclimatic forecasts



# Data Driven Policy Development



ISEE Platform



Mapping of energy scenarios, urban heat island etc.



# Data Driven Policy Development Outputs



## Energy Data

- Benchmarking buildings energy end use for conservation code
- Incentives proposal
- Ex-ante and Ex-post analysis for code impact assessment

## Environment data

- City level air quality targets
- City level water quality targets
- Development control rules and regulations



# Potential Beneficiaries



End-users



Facility Managers



DISCOMs



Real Estate  
Developers



Urban Local  
Bodies



Policy Makers



# Integrative Team



INTEGRATOR



Kanagaraj Ganesan

STRATEGIC  
ADVISOR



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LEAD ENERGY  
SPECIALIST



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CFD SPECIALIST



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FULL STACK  
DEVELOPER



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ELECTRICAL  
ENGINEER



Ankit Anand

