

General Terms of Reference

Project: Grid integration of renewable energy and demand side energy efficiency

Project no.: 14.2298.9-004.00

Tender: Establishment of an EcoNiwas Samhita Cell in North Zone (Punjab, Delhi, Uttar Pradesh) for successful implementation of residential building energy efficiency policies, IGEN-EERB

Contract No. XXXXX

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List of abbreviations

BAI	Building Association of India
BEE	Bureau of Energy Efficiency
CREDAI	Confederation of Real Estate Developers' Associations of India
DISCOMs	Distribution companies
ECBC	Energy Conservation Building Code
ECBC-R	Energy Conservation Building Code- Residential Building
EC Act	Energy Conservation Act
EE	Energy Efficiency
EEB	Energy Efficiency in Building
ESCOs	Energy Services Companies
FSI	Financial Services industry
GHG	Green House Gas
GRIHA	Green Rating for Integrated Habitat Assessment
IGEN	Indo German Energy Program
LCC	Life Cycle Cost
LEED	Leadership in Energy and Environmental Design
MEPS	Minimum Energy Performance Standards
MNRE	Ministry of New and Renewable Energy
MoP	Ministry of Power
MoUD	Ministry of Urban Development
M&V	Measurement and Verification
NAPCC	National Action Plan for Climate Change
NMEEE	National Mission on Enhanced Energy Efficiency
NDC	Nationally Determined Contributions
NREDCO	National Real Estate Development Council
NZEB	Net Zero Energy Building
PWD	Public Works Department
ULBs	Urban Local Bodies
TCs	Technical Co-operation
ToR	Terms of Reference

1 Project description

1.1 Brief description of the project

Energy efficiency is one of the world's largest energy resources, and we are only just beginning to tap its potential. India has a tremendous opportunity to turn its building boom into an energy boom, simply by building in energy-efficient features and capturing the value of energy savings in its buildings.

The current policy environment is beginning to promote energy efficiency and the execution of national and state level programs will be the key determinants of its success. India's National Action Plan on Climate Change (2008) points to building efficiency measures as essential to carbon emission reduction.

Rapid urbanization is creating vast opportunities through an unprecedented demand for the construction of buildings, which already account for more than 30 percent of India's total electricity consumption. In line with expanding development, the country's buildings sector is expected to increase five-fold from 2015 to 2050. India is at a unique crossroads where two-thirds of the commercial and high-rise residential structures that will exist in 2030 are yet to be built. Implementing energy efficiency in buildings that are being constructed in the next ten years thus presents a singular opportunity to lock in energy and cost savings for the next several decades.

In 2012, residential buildings accounted for 20.4% of India's total electricity consumption and the electricity consumption in residential buildings is about 2.3 times more than that of commercial buildings. Projections shows that electricity consumption in residential buildings is expected to increase 7 fold during the period 2012-2032. The residential sector will become the largest consumer of electricity in the country with 36.5% share of the total electricity consumed in 2032.

The Ministry of Power and Bureau of Energy Efficiency (BEE) are entrusted with the task of implementation for the National Mission on Enhanced Energy Efficiency (NMEEE) under National Action Plan on Climate Change (NAPCC). This mission has a component which deals with the Commercial and Residential Building Energy

The Energy Conservation (EC) Act of 2001 provides the framework for energy efficiency imperatives in India followed by the National Mission for Enhanced Energy Efficiency (NMEEE) in 2008. India's Nationally Determined Contributions (NDC) aim to reduce the emissions intensity of our GDP by 33–35 per cent by 2030 from the 2005 level; mandates promotion of energy efficiency in the economy, notably in industry, transportation, buildings and appliances; as well as development of climate-resilient infrastructure. Over the past few years, BEE has introduced initiatives to promote design of energy-efficient commercial buildings based on ECBC so far related to commercial buildings; energy conservation in buildings and municipalities through performance contracting by ESCOs; adoption of energy-efficient consumer appliances through energy labeling; market transformation towards energy-efficient appliances through demand side management programs; energy efficient motors; and enhanced focus on energy-efficiency investments in industry due to energy data reporting and benchmarking practices.

The project is aligned with the commitments made by the Indian Government to meet its objectives submitted under NDCs.

The Federal Republic of Germany and the Government of the Republic of India have, under the Indo-German Technical Cooperation, agreed to jointly promote the "Indo-German Energy

Programme” (IGEN) with the aim to promote energy efficiency/conservation in energy consumption so to use energy more efficiently and in turn improve the environment/climate protection.

GIZ is an international cooperation enterprise for sustainable development which operates worldwide, on a public benefit basis. GIZ is fully owned by the German Federal Government, GIZ implement development programs in partner country on behalf of the German Government in achieving its development policy objectives.

Under IGEN–EE, considerable amount of work has been done in different programs such as Standard and Labeling, Energy Manager Training and Examination, Energy efficiency in Industries under PAT Program. BEE and GIZ mutually agreed that there is a need for development of Energy Efficiency Building program in India through the International experience gained by GIZ.

Buildings account for more than 30 percent of India’s total electricity consumption in India and it also contributes significantly to peak load. In line with expanding development, the country’s buildings sector is expected to increase five-fold from 2015 to 2050. Thus, implementation of EcoNiwas Code is imperative. Following this objective, GIZ seeks to contract a consultant that will support in Establishment of an EcoNiwas Samhita Cell at North Zone States for successful implementation of residential building energy efficiency policies.

1.2 Description of the measure of Technical Cooperation (TC)

1.2.1 Objectives

The objective of the proposed assignment is to select an agency that will support in Establishment of an EcoNiwas Samhita Cell in North Zone for successful implementation of residential building energy efficiency policies. The aim of the proposed assignment is to select service provider that will support North Zone to implement Eco Niwas Samhita (ENS) developed by Bureau of energy Efficiency (BEE), Ministry of Power and document learning lessons. Key objectives are:

1. Increase awareness on energy conservation building code
2. Facilitate capacity building of builders and building approval officials
3. Facilitate implementation support to the state
4. Facilitate demonstration through pilot testing of ENS
5. Support in creating a forum of key stakeholders for regular interactions

1.2.2 Target group and other stakeholders

The target group of the consulting work consists of the relevant staff members of MoP, MoHUA, BEE, State Designated Agencies, CPWD & State PWDs, State Urban Development Ministries, ULBs, City Planners, Building material manufacturers, Architects & Engineers, Financing bodies, Municipalities, and Green Building certification bodies in India and specific to the states selected under North Zone.

1.2.3 Lead executing agency and implementing organization

Lead executing agency and implementation organization will be BEE on behalf of the Ministry of Power, Government of India. The Government of India set up Bureau of Energy Efficiency (BEE) on 1st March 2002 under the provisions of the Energy Conservation Act, 2001. The mission of the Bureau of Energy Efficiency is to assist in developing policies and strategies with a thrust on self-regulation and market principles, within the overall framework of the Energy Conservation Act, 2001 with the primary objective of reducing energy intensity of the Indian economy. This will be achieved with active participation of all stakeholders, resulting in accelerated and sustained adoption of energy efficiency in all sectors.

The ENS Cell of selected agency shall be stationed at the state level of each state selected under North Zone, either at state designated agency's (SDA) office or any other office suggested by SDA. The agency needs to work closely with the state SDA and report the progress of each Work Package to SDA for their approval.

1.2.4 Contractor's profile

The agency shall be consisting of team of experts in the field of code implementation strategies, working with government bodies, awareness and capacity building programs, climate responsive building design, building performance analysis (daylight analysis, energy modelling, CFD simulation, etc.), and green building certification. The contractor, must have experience of the energy efficiency code and its implementation and should have supported in several International and national programs on Energy Efficiency in building, training and awareness, impact assessment, and implementation.

2 Terms of Reference

Built environment is a significant contributor to the global warming due to extensive emission of greenhouse gases (GHGs) from the buildings. Building sector accounts to about 35 percent of total energy used in India. In coming years, there is an enormous need for both new residential and commercial buildings pan India, especially in cities. BEE is assisting Government of India in implementing and operationalizing the Eco Niwas Samhita (ENS), through a comprehensive and integrated approach.

The aim of the proposed assignment is to select service provider that will support North Zone to implement Eco Niwas Samhita (ENS) and enhance awareness and capacity building for the various programme, schemes, activities developed by Bureau of energy Efficiency (BEE), Ministry of Power for the building energy efficiency and document learning lessons. Key objectives are:

1. Increase awareness on energy conservation building code for residential buildings
2. Facilitate capacity building of builders and building approval officials
3. Facilitate implementation support to the state
4. Facilitate demonstration through pilot testing of ENS
5. Support in creating a forum of key stakeholders for regular interactions

Towards this, the assignment aims to support establishment of a forum under the Chairmanship of Principal Secretary, Urban Development Department of the State and an ENS Cell. ENS Cell shall be established in North Zone **as an extension of existing ECBC Cell of BEE**. The states selected and categorized under North Zone are listed in Table 1. The selected agency to establish a different ENS cell in each state as per the below requirements and work packages.

Table 1: ENS Cell – State/UT distribution

S.no.	ENS Cell	State
1.	ENS Cell – 1	Uttar Pradesh
2.	ENS Cell – 2	Punjab
3.	ENS Cell – 3	Delhi

2.1 Requirement in Technical Proposal

The bidder needs to follow the heading mentioned in section 1 (1.1 to 1.6) of the Technical Assessment Grid excel sheet. Any other topic as found suitable by the bidder needs to be added after section 1 of the grid heads.

2.2 Scope of Work & Deliverables

2.2.1 Work Package 1: Implement the strategy action decided by the ENS implementation forum in North Zone –

- Organize all meetings of the constituted forum under the chairmanship of Principal Secretary, UDD or Housing and urban Planning Department, which comprises of key stakeholders from state public or private organizations or any other meetings with the stakeholders/ organization necessary for the implementation of the ENS in North Zone states.
- Facilitate discussions between the stakeholders to draw the road map for the ENS implementation and execute the strategies at ground level

Deliverables

- a) Proceedings of each meetings held at state level
- b) Road map for ENS implementation
- c) Monthly Progress review report for the execution of forum activities.

2.2.2 Work Package 2: Provide technical assistance for ENS implementation and enforcement

- Develop roadmap for ENS implementation and provide guidelines for implementation of residential code in the state in consultation with other stakeholder departments.
- Develop ENS Rules for effective enforcement of code and prepare enforcement model for implementation of Residential Building code
- Prepare brief manual for understanding of residential code
- Use the existing material manual prepared by BEE and prepare regional specific material recommendations and availability mapping with cost and energy saving comparison
- Propose revision of bye-laws/ General Development Control Rules (GDCR) documents to include ENS clauses and specifications in government guidelines.
- Prepare draft ENS in consultation with the stakeholders for notification & enforcement in the state. (Refer ENS 2018).
- Review and compilation of existing government rules/orders/notifications and guidelines related to efficient use of energy in buildings
- Provide technical assistance for ENS enforcement
 - Provide hand-holding support to the Urban Local Bodies (ULBs) / SDA / State Govt. for evaluating ENS compliance of application submitted for getting building construction and occupancy permits
 - Assist in establishing ENS compliance tools and processes, energy monitoring and verification system
 - Coordinate with central government, state government departments and urban local bodies (ULBs) departments to enforce ENS

Deliverables

- a) Submission of roadmap for ENS implementation in state(s); ENS Rules document
- b) Submission of compendium of Government rules/orders/notifications and guidelines related to efficient use of energy in buildings; including draft bye-laws/GDCR document incorporating ENS provisions
- c) Submission of draft ENS for notification & enforcement in state(s) or Submission of draft amendments of the code as per ENS 2018
- d) Draft Notification of ENS 2018 in the State Gazette/ Government Order/ Building by-laws
- e) Case studies report of existing energy efficiency in residential buildings
- f) Report on enforcement model for implementation of Residential Building code
- g) User Manual for understanding of residential code
- h) Document database on regional specific material recommendations and availability mapping with cost and energy saving comparison

2.2.3 Work Package 3: Provide technical assistance to residential buildings to make them energy efficient (Demonstration Projects) and provide residential building labels (minimum 4 star)

- Identify potential residential projects in discussion with forum/ forum’s stakeholders/ SDA and written approval from SDA.
- The minimum plot size of the project should be 5000 square meters where 1 project is considered as one residential society complex as a whole.
- Provide technical assistance to ensure that the proposed design is ENS compliant
- The projects Techno-economic feasibility report should elaborate on
 - Methodology for technical analysis or assessment along with assumptions
 - Outputs, results, Conclusions and Recommendations
 - Specifications of proposed strategies/technologies; and
 - Financial feasibility analysis

Deliverables

- a) Identification of project sites
- b) Submission of detailed project reports
- c) The number of building projects to be taken up by respective ENS Cell are as follows:

Table 3: ENS Cell – Number of Building Projects

1.	Each ENS Cell	Number of Building Projects – At least 10 building projects out of which at least 2 should be affordable housing projects.
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2.2.4 Work Package 4: Organize ENS awareness, training, and capacity building programmes.

The selected agency to provide below mentioned awareness and training programme in consultation with BEE, SDA, GIZ and all relevant stakeholder departments. The said training programme should be spread uniformly over city level, regional level, and state level.

- **Training-A:** Organize training programme (1-day duration) on ENS implementation and capacity building. The participants will be a mix of builder/ developer, and government departments (senior officials like commissioner of Urban Local bodies, senior officials from urban development department, senior engineers/ architects/ planners in North Zone government department) etc who are working as a leader in their respective organization. (at least 30 participants in each)
- **Training-B:** Organize technical training programme (2 days duration) for building sector stakeholders. The participants will be a mix of architects, engineers, project architect and engineers at developers, builders, government officials from SDAs, PWD, junior engineers and architects from ULBs, TCPO and UDDs who would be technical resources in their organization. The training should focus on the content of ENS and compliance tool (at least 50 participants in each). 25% of these training to be conducted focused on simulation-based training or tools related to Residential Building Code compliance.
- **Training-C:** Develop training manual and Deliver all sessions of training programme (2 days duration) for technical/administrative staff of UDDs, UDAs and Ministry related to housing on the content of ENS and compliance tool (at least 30 participants in each) preferably at administrative college of North Zone States.
- **Training-D:** Develop training manual and Deliver all sessions of training programme (1-day duration) for head of UDDs, UDAs of state and Senior Administrative Grade (SAG) from Ministry related to housing on the content of ENS and compliance tool (at least 20 participants in each) preferably at administrative college of North Zone States.
- **Awareness-A:** Organize/ attend and deliver session in the regular conference of NAREDCO and/or CREDAI chapter of North Zone States and present the policies on EE buildings.
- **Awareness-B:** Organize/ attend and conduct awareness drive in Architectural Colleges of North Zone States and organize one design submission of the architecture class in each college to design an EcoNiwas Samhita compliant residential building complex.

Each programme shall be presented by two ECBC Master Trainers listed/ acknowledged by BEE. Logistics of the workshops –

- 1) The entire workshop planning, administration, and organizing is the responsibility of the selected agency.
- 2) The selection of venue, invitation to speakers, boarding and lodging to be taken care by agency in consultation with GIZ.
- 3) The entire cost of the workshop shall be borne agency and shall be reimbursed as per actual expenses and invoices submitted by the agency.

- 4) Bidder need to provide overall training programme cost as per budget format
- 5) Agency to hire 2 ECBC Master trainer/ empanelled architects or engineers/ experts approved from BEE for each training programme listed above.
- 6) The venue cost of training A and Training B shall be either SDA conference room or a reputed hotel of the city.
- 7) The venue cost of training C and D shall be as per the rates of Administrative college of the state
- 8) No venue cost for the Awareness A and B is considered as the same needs to be either universities or builders conferences.

Deliverables

- i. Submission of approved background material and training materials and stakeholder list for all the training programme
- ii. Submission of proceedings of Training-A
- iii. Submission of proceedings of Training-B
- iv. Submission of proceedings of Training-C
- v. Submission of proceedings of Training-D
- vi. Submission of proceedings of Awareness-A: on ENS for builder organizations
- vii. Submission of proceedings of Awareness-B: on ENS in Architectural Colleges
- viii. The number of Training programs to be taken up by respective ENS Cell are as follows:

Table 4: ENS Cell – Number of Training programs

S.no.	ENS Cell	Training-A	Training-B	Training-C and D	Awareness-A	Awareness-B
1.	Each ENS Cell	5	10	5	8	7

The agency engaged shall work under the guidance and direct supervision of the State Designated Agency with periodic update to Bureau of Energy Efficiency and GIZ.

3 Personnel concept

3.1 Eligibility requirements of the firm

1. Please provide the legal status of your firm registered in any of the state categorized under the North Zone in Table 1. The bidder should have a registered office in the any of the one state of states categorized under North Zone in table 1.
2. Average annual turnover for the last three financial years: at least **200.000** EUR.
3. The number of employees as at 31st December of the previous year: at least 20 persons.
4. Technical Assessment in only based on reference projects with a minimum commission value of 30.000 Euros.
5. Please provide at least 3 reference projects of your portfolio in the field of implementation of a energy efficiency policy at state level and 2 reference projects in in building construction in state or PWD level last 3 years.

Following criteria's are to be met by the bidder –

- 1) GIZ has floated 2 more similar tenders in different zone. 1 Bidder to bid only in 1 zone.
- 2) The successful bidder should depute at least three full-time consultants¹ in the ENS Cell at the state office/state designated Agency (based on the availability of space).
- 3) Out of pool of Consultants, one full time architect consultant stationed at the state level should possess a minimum of 8 years' experience and designated as Team Leader and at least 2 Engineer consultants (Civil Engineer/ Electrical and Electronic/Mechanical Engineer) shall have a minimum experience of at least 5 years of experience.
- 4) **The team structure proposed (except for the team Manager) for the state should be exclusively for the respective state only. Bidder should submit the detailed CV of all the proposed team members.**

3.2 Team composition and experiences requirement

The successful bidder shall depute **at least three** full-time consultants in respective ENS Cell as an extension of existing ECBC Cell in State SDAs of North Zone. ENS cell to be co-ordinated by the lead consultant from the selected agency. The minimum number of consultants to be placed in each ENS Cell is as follows:

Table 2: ENS Cell – Minimum Number of consultants

1.	Each ENS Cell	Minimum Number of full-time consultants - 3 (1 Architect, 2 Engineers)
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3.2.1 Selection criteria for the Team Manager. (30 Man-days)

1. Shall be either an architect or engineers with a Master's degree (2.2.1)
2. Minimum experience of 15 years (2.2.3)
3. Experience of state level policy implementation in India (2.2.4)
4. Must demonstrate the leadership and management of state policy implementation, government officials, and team (2.2.5)
5. Must have experience of state policy implementation in the respective state (2.2.6)

It is the responsibility of the team Manager to monitor and manage all the work packages stated in the ToR and ensure outcome. Team Manager to coordinate with ENS cell for their day to day activities and SDA requirements. The expected man-days of team Manager are 30 days in the 15 months' time period. Team Manager is expected to travel once a month to the respective state for project steering and control.

¹ Employee rules of the Duty station (SDA/ULB) shall be applicable for working hours, holidays, leaves, etc.

3.2.2 Selection criteria for the pool of full-time consultant

- **Architect – Consultant (Team Lead) (15 man-months, 22 days per month)**

Essential:

- Bachelor's degree in architecture/planning from a recognized University or Institute. (2.1.1)
- Minimum experience should include project related experience commensurate with the assignment roles and responsibilities expected to be handled by the candidate specifically in the areas of energy efficient building design and building energy efficiency code implementation. (2.1.4)
- Number of years for acquiring post-graduation (full time enrolment only) or two years whichever is less will be compensated for the requisite professional experience. (2.1.3)
- Must demonstrate the leadership and management of state policy implementation, government officials, and team (2.1.5)
- Conversant with the native language of the state they are being proposed for (2.1.2)
- Must have experience of building or building service design in respective state (2.1.6)

Desirable:

- Master's degree in Building Science or other related field from a recognized University or Institute or equivalent. (2.1.1)
- ECBC Master Trainer / GRIHA CP, Evaluator & Trainer / LEED AP / IGBC AP / CMVP professional certifications are desirable. (2.1.4)

- **Engineer – Consultant (15 man-months per engineer, 22 days per month)**

Essential:

- Bachelor's degree in Civil/Electrical and Electronic/Mechanical Engineering only from a recognized University or Institute (2.3.1 and 2.4.1)
- Minimum experience should include project related experience commensurate with the assignment roles and responsibilities expected to be handled by the candidate specifically in the areas of Building Energy Efficiency code implementation. (2.3.4 and 2.4.4)
- Number of years for acquiring post-graduation (full time enrolment only) or two years whichever is less will be compensated for the requisite professional experience. (2.3.3 and 2.4.3)
- Conversant with the native language of the state they are being proposed (2.3.2 and 2.4.2)
- Must have experience of building or building service design in respective state (2.3.6 and 2.4.6)

Desirable:

- Master's degree in Engineering/Energy Management/Building Science or other related field from a recognized University or Institute or equivalent. (2.3.1 and 2.4.1)

- ECBC Master Trainer / GRIHA CP, Evaluator & Trainer / LEED AP / IGBC AP / CMVP professional certifications are desirable. (2.3.4 and 2.4.4)

Competencies for the individual professional to be deputed in the Cell (2.1.4, 2.3.4 and 2.4.4):

- High quality analytical skills on issues related to energy efficiency
- Working experience with building energy simulation software
- Working experience in Energy Efficient Building Design
- A thorough understanding of ECBC design/ energy efficiency intervention projects in buildings including passive techniques
- Working experience in energy auditing and commissioning of energy systems
- Familiarity with national projects on energy efficiency interventions
- Excellent drafting and communications skills in English
- Ability to work independently and as a team player in a multi-cultural environment
- Working knowledge of computers including MS Office package and related architectural software
- Ability to meet deadlines and prioritize multiple tasks

All hardware/equipment required for day-to-day operations like computers/laptops, printers, scanners, internet dongles etc., will have to be provided by the service provider/ agency to the technical resources placed in the Cell.

3.2.3 Others Requisite

BEE/ GIZ may take interview of the candidates selected by the agency for appointment at respective state. If found, not suitable, the agency has to replace them with suitable candidate as per requirement of BEE/ GIZ **mentioned in the ToR** within 15 days with approval of BEE and GIZ.

4 Timeframe of the contract

Timeframe: The duration of contract shall be for 15 months. All the Work Packages have to completed latest by December 2020. The contract is expected to start in September 2019.

5 Items of equipment

Not applicable. Agency to provide all equipments required for proper functioning of the ENS cell like laptop, printer, mobile, wifi etc.

6 Expendable goods

For expandable goods and ongoing office costs (costs for materials, laptops, printers, internet, telephone, stationaries etc.) an amount shall be included. However, Agency need not include the office cost as the ENS cell shall be stationed at SDA or other state department.

7 Further Requirements

- a) The entire proposal including approach and methodology, including tool and software's proposed, CVs etc., needs to be in English. The CVs need to be in uniform format with a maximum of three pages.
- b) All activities including travels, meetings and tasks in different focus areas need to be aligned with the state SDA.
- c) In case the bidder is a consortium or joint venture, the lead bidder should as well take up tasks in the assignment and shall be involved as the responsible coordinator among the group. The share of tasks shall be evaluated on the basis of the proposal submitted as above.
- d) All communication with media (TV, radio, print and other media) related to the assignment has to be approved by the responsible person of GIZ.
- e) All reports, slides, presentations and other media and information material need to be submitted to GIZ in English language in soft copy and in hard copy (at least 3 copies) as required.
- f) The Contractor should at all times of the assignment possess the copyrights (licenses in the case of software packages) of the documents, pictures, technical papers, standards used in the study.
- g) Any data to be purchased from external sources if necessary for the purpose of execution of the contract shall be purchased by the Contractor on its own expense.
- h) Cost of venue, food etc. for organizing round-tables, workshops shall be paid by Agency directly and reimbursed by GIZ on submissions of actuals separately. All travel, accommodation, food etc. for the staff of the Contractor has to be borne by them and have to be budgeted in their proposal. Expenses incurred can only be reimbursed after cost proposals have been submitted to and approved by GIZ prior to the acceptance and if sufficient bills / proofs are submitted to GIZ as desired.
- i) The bidder should consider all the relevant and related activities, including but not limited to the activities proposed above in the work packages, to ensure the successful completion of all the Work Packages.
- j) All deliverables under Work Package 1 to 4 shall be considered final after incorporating all the comments and Feedbacks from the stakeholders and final approval from GIZ.

8 Payment terms:

S. No.	Activities	%age of total fees payable	Timelines
1	Award of Contract – advance Inception meeting in New Delhi and introduction meeting with SDA.		Contract award
2	<p>Work Package 1:</p> <ul style="list-style-type: none"> • Road map from Implementation forum • Proceedings of meetings and monthly progress report of implementation forum for Q1 and Q2 <p>Work Package 2:</p> <ul style="list-style-type: none"> • Acceptance of work plan by SDA and BEE • Acceptance of - report by SDA and BEE on “Review and compilation of existing government rules / orders / notifications and guidelines related to efficient use of energy in buildings; and proposal for updating them to include ENS provisions” • Submission of draft ENS for notification of the code as per ENS 2018 <p>Work Package 3:</p> <ul style="list-style-type: none"> • Acceptance of work plan by SDA and BEE • Submission of - building description for all identified projects for technical assistance and acceptance by SDA and BEE • Submission of Techno-economic feasibility report for 5 buildings and acceptance by SDA and BEE <p>Work Package 4:</p> <ul style="list-style-type: none"> • Acceptance of work plan and background material for all training programmes by SDA and BEE • Submission of proceedings of 50% of the total numbers of training programs and 50% of the total numbers of awareness programmes and acceptance by SDA and BEE 		Month 6
3	<p>Work Package 1:</p> <ul style="list-style-type: none"> • Proceedings of meetings and monthly progress report of implementation forum for Q3 and Q4 <p>Work Package 2:</p> <ul style="list-style-type: none"> • Submission of ENS Rules document and acceptance by SDA and BEE • Submission of revised bye-laws/GDCR document and acceptance by SDA and BEE 		Month 12

	<ul style="list-style-type: none"> • Draft Notification of State amended ENS (based on ENS 2018) in the State Gazette / Government Order (G.O.) / Building Bye-laws <p>Work Package 3:</p> <ul style="list-style-type: none"> • Submission of Techno- economic feasibility report for 5 buildings and acceptance by SDA and BEE <p>Work Package 4:</p> <ul style="list-style-type: none"> • Submission of proceedings of 50% of the total numbers of training programs and 50% of the total numbers of awareness programmes and acceptance by SDA and BEE 		
4	Closing report of the entire project after 15 months		Month 15

9 Times of the deliverable activity

S.no	Deliverables/Activities	Reporting	Mile stone
0.1	Project kick-off meeting to discuss approach for the study and expected outcomes.	Sep - 20	
0.2	Inception Report: The consultant shall provide an overview for all sub activities mentioned under each Work Package.	Sep - 20	
0.3	Monthly Progress Reports: summary of progress on activities and Work Packages	Each month	
WP1			
1.1	Organize all meetings of the constituted Forum	Dec - 20	
1.2	Road map for ENS implementation and guidelines	Apr – 19	1
WP 2			
2.1	Brief manual for understanding of residential code	Dec - 19	
2.2	Regional specific material recommendations and availability mapping with cost and energy saving comparison	Dec - 19	
2.3	Revision of bye-laws/ General Development Control Rules (GDCR) documents	Jan – 20	2
2.4	Draft ENS for notification & enforcement in the state	Apr – 20	3
2.5	Case studies report of existing energy efficiency in residential buildings	June – 20	
WP 3			
3.1	Identify potential residential projects for demonstration	Oct – 19	
3.2	detailed project reports and technical assistance	Dec – 19	
3.3	Techno-economic feasibility report	Apr - 20	4
3.4	Complete At least 10 building projects out of which at least 2 should be affordable housing projects.	Dec - 20	5
WP 4			
4.1	Background material and training materials and stakeholder list for all the training programme	Nov - 19	6
4.2	Submission of proceedings of Training-A	Nov - 19	
4.3	Submission of proceedings of Training-B	Dec - 19	
4.4	Submission of proceedings of Training-C	Dec - 20	
4.5	Submission of proceedings of Training-D	Dec - 20	
4.6	Submission of proceedings of Awareness-A	Dec - 20	
4.7	Submission of proceedings of Awareness-B	Dec - 20	
4.8	Complete compendium of training and awareness programmes	Dec – 20	7

Annexure A: Sample Template for Progress Report

Activity	Responsible Consultant	Timeline as per work plan	Actual % Work Progress	Status	Remarks
WP 1					
Sub task 1.1					
...					
...					
WP 2					
...					
Brief summery in bullets to justify the status					
	Completed (100%)				
	in progress (26%-99%)				
	Progress less than 25%				