



БАРИЛГА ХОТ
БАЙГУУЛАЛТЫН
ЯАМ



“Nationally Appropriate Mitigation Actions (NAMA) in the
construction sector in Mongolia project”

GREENHOUSE GAS (GHG) INVENTORY IN THE CONSTRUCTION SECTOR

Bayarlkham Byambaa
June 18, 2018

GHG emission from construction sector

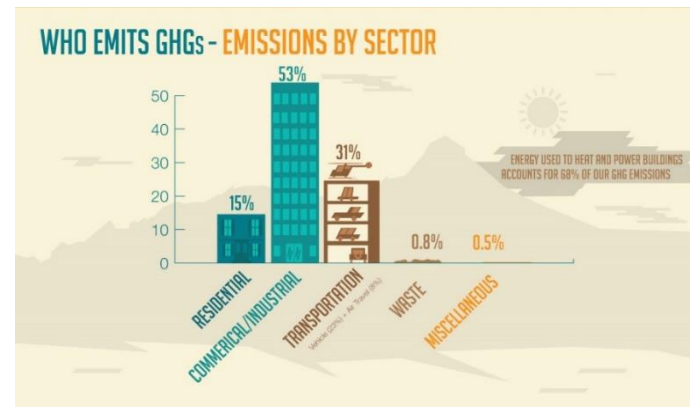
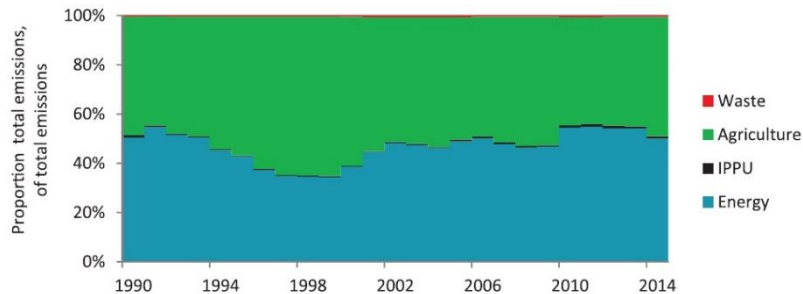
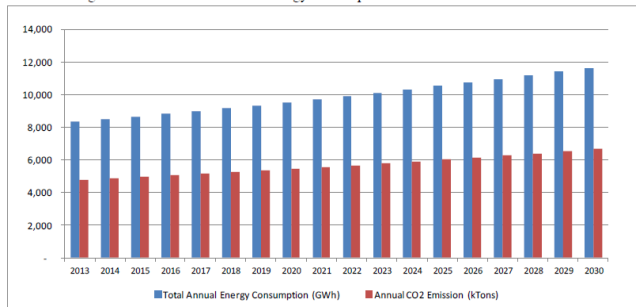
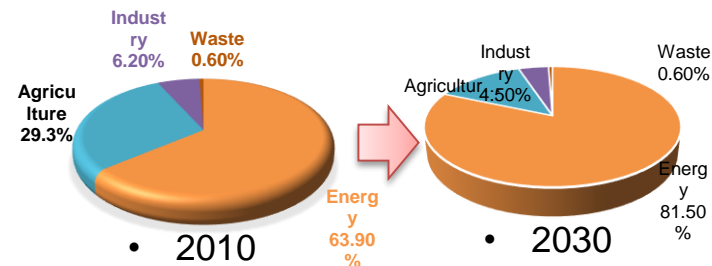


Figure 2. Estimations of annual energy consumption and GHG emission 2013-2030



Source: NAMA project document, UNDP, 2016



Project objective

SCHEDULE & PARTNERS

Project period: 2017-2020

Executing entity:

Ministry of Construction and Urban
Development (MCUD)
UNDP Mongolia

Implementing/responsible partners:

Ministry of Environment and Tourism
Ministry of Energy
Energy Regulatory Committee

OBJECTIVE

- ❖ Facilitation of market transformation for energy efficiency in the construction sector through the development and implementation of Nationally Appropriate Mitigation Actions (NAMA) by removing barriers to increased adoption of energy efficiency technology in construction sector in Mongolia

Component 1

Establishment of baseline energy consumption & GHG emission in the construction sector

Component 2

Development & implementation of NAMA in the construction sector

Component 3

Measurement, Reporting and Verification (MRV) system for NAMA in the construction sector

SDGs:



What is NAMA?

- The concept

- Common yet differentiated responsibilities
- A set of policies and actions that developing countries undertake as part of a commitment to reduce GHG emissions

- Features

- Must be measurable, reportable, verifiable
- In forms of technology & financial transfer, capacity building
- Voluntary & Supported by developed countries

NAMA, firstly used in the Bali Action Plan, under the UNFCCC, Dec 2007, refers to a set of policies and actions that countries undertake as part of a commitment to reduce GHG emissions. NAMA recognizes that:

- ❖ Different countries, different NAMAs on the basis of equity and in accordance with common but differentiated responsibilities and respective capabilities
- ❖ Developing countries will effectively implement national action depends on the effective implementation of the commitments by developed countries in provision of financial resources and transfer of technology
- ❖ NAMAs shall be based on MRV framework

Expected outcomes

EXPECTED RESULTS AND INDICATORS

10.709 tCO₂e cumulative emissions reduced by EOP

Energy consumption and GHG emission inventory system became operational and adopted for the construction sector NAMA by Year 3

6 individual EE interventions that constitute construction sector NAMA by Year 4

MRV system for construction sector emissions set up and operational by Year 2

18,722 MWh cumulative heat and electrical energy savings by EOP

100% of new buildings fully or beyond in-compliance with BCNS by EOP

50 people gainfully employed on EE in the construction sector

4 public and private sector entities supporting the sustainable operation of GHG inventory system by EOP

3 identified fully capable and qualified private/public entities that are interested in funding prioritized NAMA projects by Year 4

2 institutions adopting and operationalizing MRV systems of the Pilot NAMA, by Year 3

3 construction sector NAMA case studies using the approved MRV framework and incorporated in policy document by EOP

Project impacts

- **Environment:**

- Reduced energy usage contributes to lower demand from coal fired heat-only boilers and power plants, hence, significantly reducing air pollution. This leads to improvements in health benefits for the entire population;
- Reduced GHG emissions thereby reducing the long term risk of climate change;

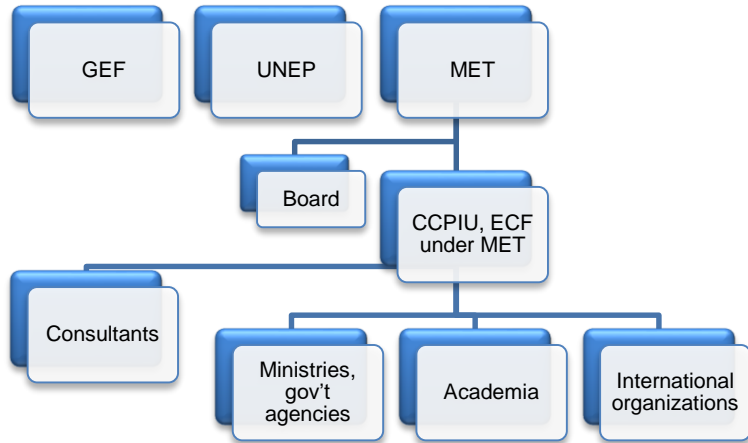
- **Social:**

- Improved living comfort and quality of life of building occupants;
- Enhanced capacities and skills of people, specifically women, employed in the construction sector

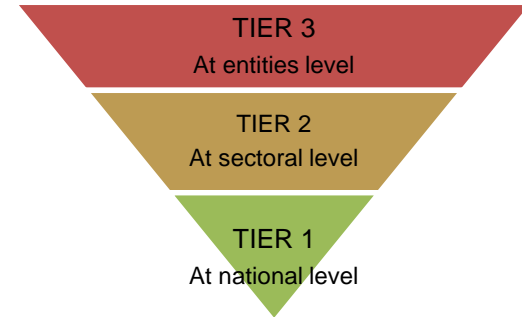
- **Economic:**

- Long term reduction of energy cost to households help lessen household expenditure and improve their financial conditions;
- Increased demand of EE construction materials/technologies which will support local manufacturers and businesses leading to better employment prospects and eventually improved local economy;
- Improved access to energy efficiency financing in the construction sector leading to EE investments;

National GHG inventory



International methodology /IPCC/



TIER 2:

**GHG inventory at the sectoral level
“Sector-specific” for Construction in
Mongolia**

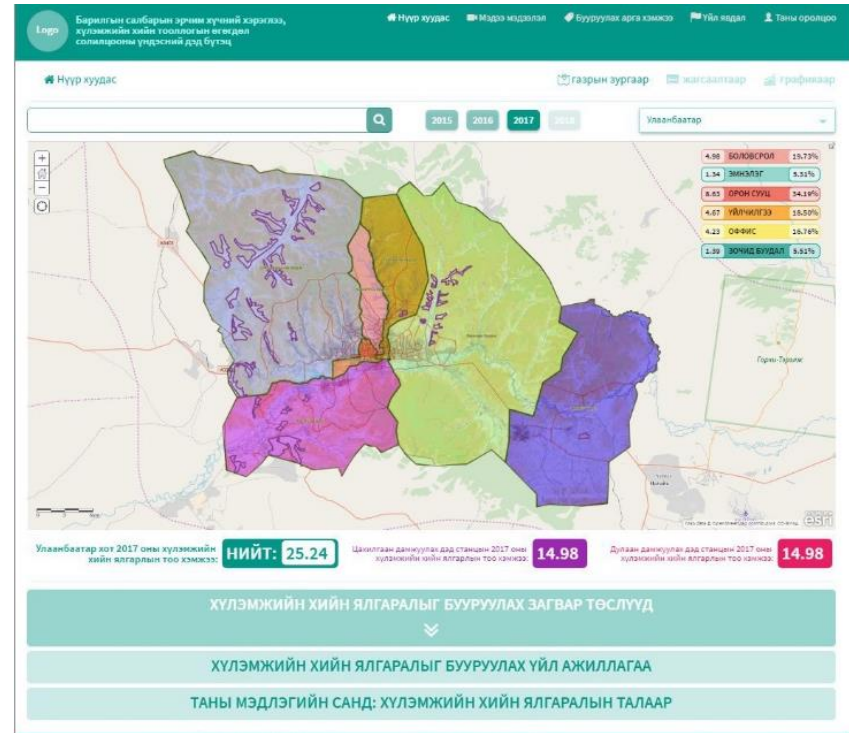
Sector-specific GHG inventory

Objective:

To estimate and report GHG emission from the construction sector in line with international methodology and guideline, in annual basis

Content:

ArcGIS based GHG emission data of buildings in Ulaanbaatar and major cities



Methodology & guideline

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Implementation of a Nationally Appropriate Mitigation Action (NAMA) in the building (and construction) sector in Mongolia

Methodology Review and Assessment for the Estimation of GHGs Emissions in the Building Sector in Mongolia



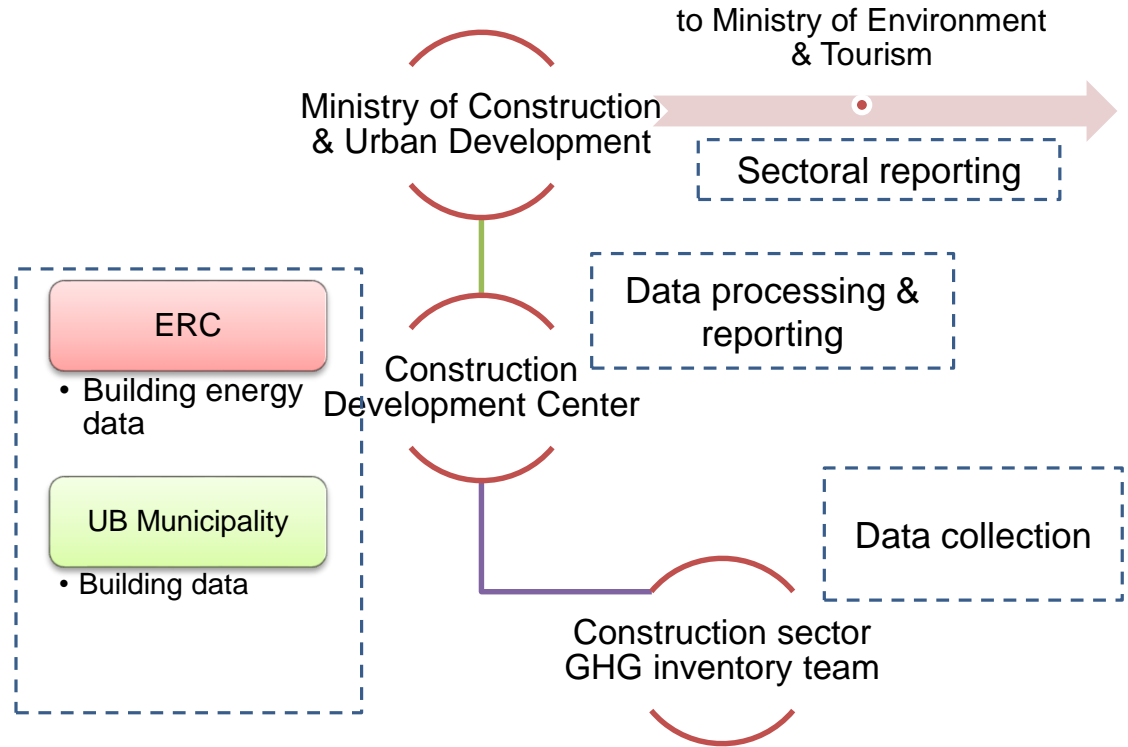
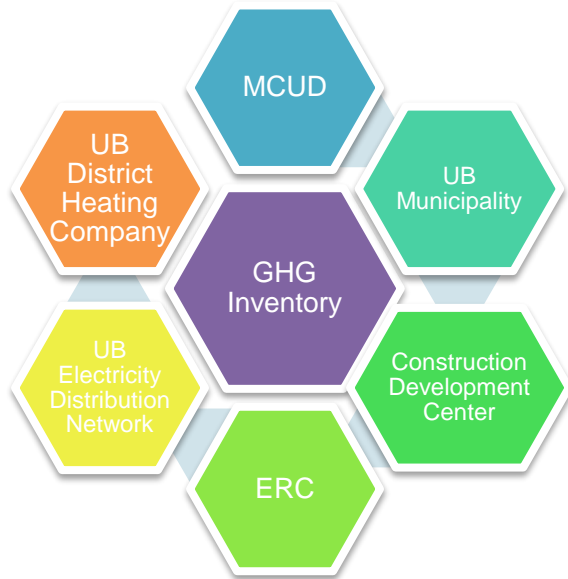
5/29/2018

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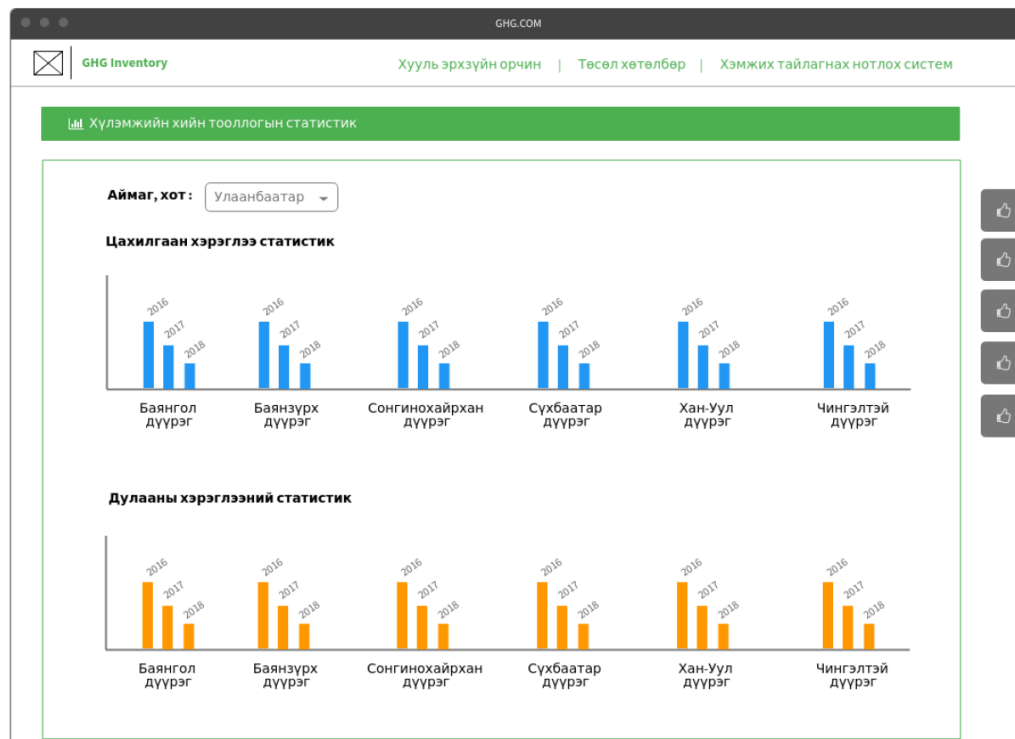
Methodology:

- To estimate GHG emission in Construction sector based on electricity and heating consumption data
- To calculate using Grid Emission Factor
- To develop 6 categories in Construction sector such as Hospital, Office, Retail, Education, Residence and Hotel
- Prepare of standardized baseline for submission under the Clean Development Mechanism (CDM)

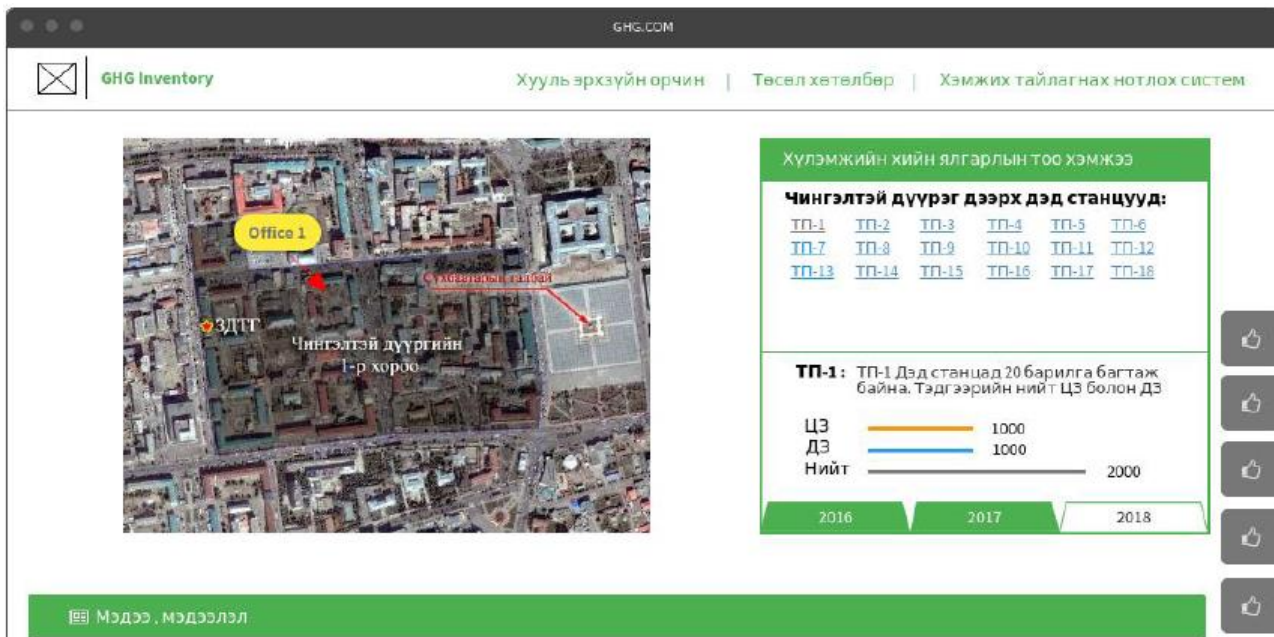
Cooperation & coordination



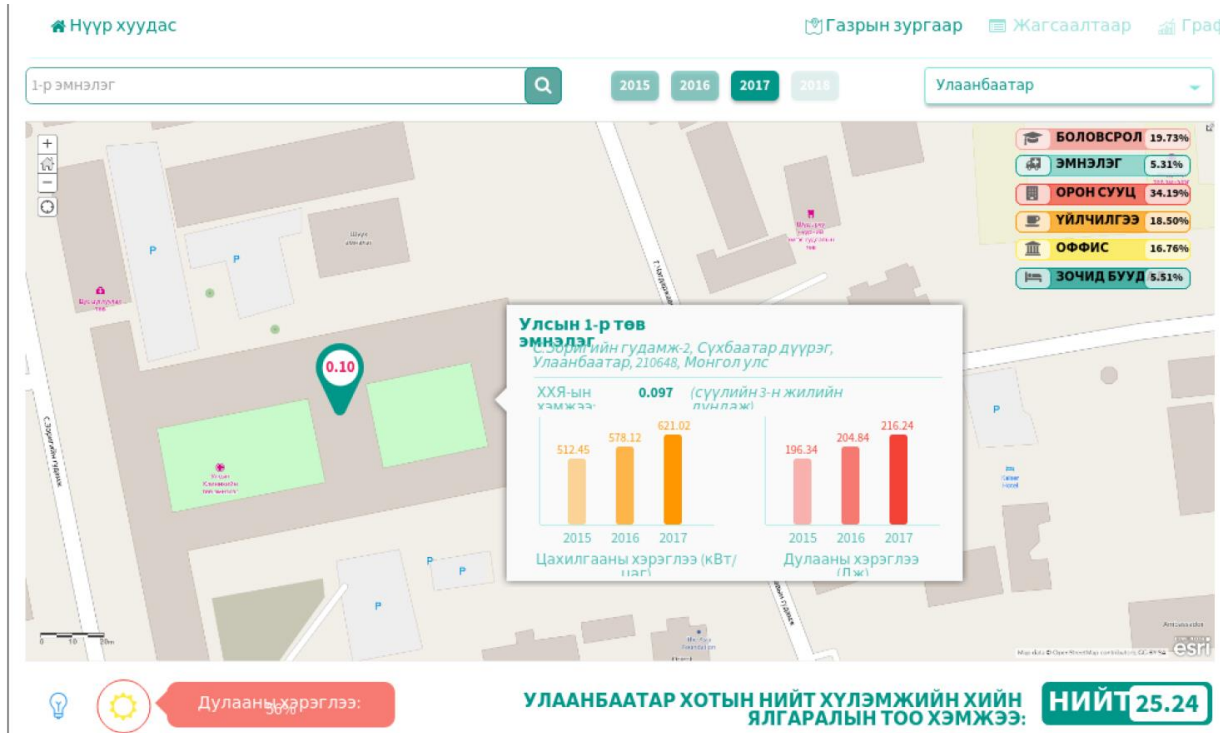
GHG emission data by districts



GHG emission data by sub-stations



GHG emission data by buildings



Project team & contact details

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