BACKGROUND INFORMATION
Promotion of Non-Fired Bricks (NFB) Production and Utilization in Viet Nam

VIET NAM CONTEXT

Population: 94 million
Economic growth: 7.08% (2018)
Rapid urbanization: 38.4% (2018) have led to significant growth in the construction 9.16 (2018), thus increased demand of bricks

With 23 coal-fired thermal power plants, releasing large accumulated amount of waste and ash: 61 million tons (2018), projected to reach 422 million tons (2030), posing great environmental and health challenges.

Fired Bricks Industry in Viet Nam (As of 2011)

Environmental and social challenges:

- Emission of 6 million tonnes of CO2 annually because of inefficient consumption of coal and wood energy
- Cause of air pollution, affecting human health and damaging crops
- Generation of large untreated waste and ash causing serious pollution
- Consumption of 3,000 ha of agricultural land for brick making
- Poor working conditions at traditional fired brick kilns factories

Targets of the National Programme on Non-Fired Bricks

Environmental and social benefits:

- Reduce 3.8 million tons of CO2 per annum from 2020 by avoid using coal
- Return Fresher air for people, reduce health impacts, thus medical costs
- Save 1,000 ha of agricultural land per annum by avoid using clay as raw materials
- Improve working conditions and surrounding environment for workers and people
- Utilize 15-20 million tons of industrial waste per annum by using fly ash from power thermal plants, blast furnace slag from steel as input materials for non-fired brick production

Annual nation-wide production of 18 - 20 billion traditional fired bricks
Demand for bricks increased by 6% annually (2005 - 2011), is expected grow at a similar pace for the next 10 years
Traditional Fired Brick Industry consumed more than 2.2 million tonnes of coal equivalent annually in 2011
UNDP-GEF NON-FIRED BRICK PROJECT’S OBJECTIVES

To reduce the annual growth rate of greenhouse gas \textbf{GHG emissions} by displacing the use of fossil fuels and the usage of good quality soil for brick making through the \textbf{increased production, sale and utilization of non-fired bricks (NFBs) in Viet Nam}. It helps to reduce GHG emission through the displacement of traditional coal-fired clay brick kilns.

EXPECTED OUTCOMES AND ACHIEVEMENTS

\textbf{Expected outcomes}

\begin{itemize}
  \item \textbf{Direct GHG reduction:} \textbf{383 ktonnes CO}_2; \textbf{Indirect emission reductions:} \textbf{13,409 ktonnes CO}_2
  \item \textbf{Policy development and support for non-fired brick technology development}
  \item \textbf{Technical capacity building} on non-fired brick technology application and operation
  \item \textbf{Sustainable financing} support for non-fired brick technology application
  \item \textbf{Increased market share} of 30% - 40% non-fired brick in Viet Nam by 2020
  \item \textbf{Non-fired brick technology application investment and replication}
\end{itemize}

\textbf{Achievements (as of December 2018)}

\begin{itemize}
  \item CO2 emission avoided: \textbf{1.8 million tCO}_2
  \item \textbf{Policies (decrees, regulation, and plans)} issued, contributing to elimination of barriers and obstacles to promote NFB widely
  \item \textbf{1,680 managers and technical staff} in 63 provinces trained; and \textbf{university training manuals} developed and applied
  \item \textbf{09 non-fired brick projects/companies} supported to get access to preferential loans of $5 million from the VN Environmental Protection Fund
  \item \textbf{Contribute to expansion} of the market share of non-fired brick to \textbf{28%}
  \item \textbf{23 companies} Provided with technical support, to increase production capacity to appx. \textbf{1 billion SBUs} (account for 15% of total non-fired brick production in Viet Nam)
\end{itemize}

SOME SPECIFIC INFORMATION ABOUT THE PROJECT

\begin{itemize}
  \item **Policy Strengthening:** Review and technical inputs provided to revision of the related chapters on NFBs, green building materials of Government Decree 24a/2016/ND-CP on the management of building materials; Decree 139/ND-CP dated 27/11/2017 on administrative sanctions in construction activities; Circular 13/2017/TT-BXD on using NFBs for construction works; Circular 01/2018/TT-BKHĐT dated 30/3/2018 on import of equipment for NFBs, standards of NFB products, and provincial roadmaps and plans to eliminate the production of fired brick
  \item **Capacity buildings and awareness raising:**
    \begin{itemize}
      \item Policy advocacy workshops and technical training courses and are implemented nationwide for local officials; NFB manufactures; construction contractors, financial institutions, etc.
      \item A package of communication products on benefits of NFBs are disseminated to enhance the use of NFBs
    \end{itemize}
  \item **Assess to finance:**
    \begin{itemize}
      \item Support provided to 10 NFB investors to develop bankable project proposals to access financing for NFB investment
      \item Support provided to Viet Nam Environmental Development Fund (VEPF and other banks) to improve guidelines for funding application by NFB investment projects
      \item Technology transfers and technical support to improve production efficiency and product quality for 23 non-fired brick producers
    \end{itemize}
  \item **Fund:** 2.8 million USD from GEF/UNDP
  \item **Duration:** 2015 -2019
  \item **Implementing Partners:** Ministry of Science and Technology (MOST) and Ministry of Construction (MOC)
\end{itemize}