TERMS OF REFERENCE

**TECHNICAL GUIDELINE FOR INVESTMENTS IN CONCRETE BRICK PRODUCTION**

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| Name of Project: | Promotion of Non Fired Brick Production and Utilization in Vietnam |
| Name of assignment: | Technical guideline for investments in concrete brick production |
| Consultant selecting method: | National individual consultant, nation wide |
| Duty location: | Hanoi and other provinces as requested |
| Duration: | 7 months starting from June, 2017 |
| Direct supervisor: | National Senior Technical Adviser |

**1. Background**

On August 29th 2008, the Prime Minister issued Decision No. 121/QD-TTg approving the “Master Plan on development of building materials up to 2020”. Later, Prime Minister issued Decision No.1469/QD-TTg dated 22th August 2014 on "Master Plan of building materials development up to 2020 with vision to 2030".

To promote the development of NFB, the Prime Minister issued the Decision No. 567/QD-TTg dated 28th April 2010 on NFB development program up to 2020 (Program 567). The objectives of the program 567 are as follows:

- Market share of NFB would increase to 20% - 25% in 2015 and will increase 30% - 40% in 2020;

- Around 15-20 million tonnes of industrial wastes (ashes) from coal-fired thermal power plants and other industries are used annually to produce non-fired building materials tosave around 1,000 hectares of agriculture land annually;

- Gradually, all fired clay brick (FCB) production plants using traditional clamp kilns will be replaced by NFB production plants.

On 19th September 2014, the Prime Minister issued Decision No. 1686/QD-TTg on approval of Project “Promotion of Non-Fired Brick (NFB) Production and Utilization in Viet Nam” funded by UNDP. The executing entity of this project is Ministry of Science and Technology.

The objective of the NFB Project is to reduce the annual growth rate of green house gas (GHG) emissions by reducing gradually the use of fossil fuels and good quality soil for brick production through promoting the production, sale and utilization of NFBs in Vietnam. This objective will be achieved by removing barriers to increase production and utilization of NFBs through 4 components:

i) Policy support for the development of NFB production technology;

ii) Technical capacity building on the application and operation NFB production technology and on the use of NFB products;

iii) Sustainable financing support for the application of NFB production technology;

iv) Demonstration of NFB production technology, investment and replication.

The Project will be implemented over a 5-year period and it is expected to reduce GHG emission through the displacement of coal-fired clay brick kilns. The estimated direct GHG reduction is 383 ktonnes CO2. The indirect GHG reduction is 13,409 ktonnes CO2 that is cumulative for a 10-year period after the end of the Project.

The project has supported 03 demonstration projects of non-fired brick (concrete brick). Based on the experience obtained from these three projects, replication and technology transfer has been supported to 21 other projects.

Potential investors for Non-Fired Bricks in Vietnam face a lot of challenges, especially in terms of lack of knowledge of procedural issues involved in developing, financing and implementing the project, and on how to effectively plan for and manage the business. The demonstration and replication projects so far have contributed a lot of experience and knowledge on these issues which now needs to be captured in guidance documents, and shared with all stakeholders, so that new investments could benefit from this experience.

Hence, according to the work plan for 2017, the project will develop a "Technical guideline for investments in concrete brick production".

This Term of Reference will describe the above-mentioned task.

**2. Objective**

The objective of the assignment is to develop a technical guideline to support investors of concrete brick production and those providing support for investments such as technical service providers, equipment suppliers, research institutes, academia, in understanding the procedure for an investment project from the conceptual stage till commissioning of the plant, and later in terms of strategic and efficient business management, maximising financial returns and socio-economic and environmental benefits.

**3.** **Deliverables:**

3.1 In consultation with PMU, develop a brief concept note and work plan, specifying the scope and level of details of the assignment, the methodology to be used, and the schedule

3.2 Report of survey and assessments of advantages and challenges for business when investing in NFB production with detailed recommendation for addressing the obstacles and ensuring succesful investment in NFB production, with high quality products.

3.3 "Technical guideline for investments in concrete brick production " (termed as Technical guideline) shall have the following contents as a minimum:

a) Brief introduction to the project " Promotion of Non Fired Brick Production and Utilization in Vietnam"

b) A procedure for preparing and applying for investment projects on NFB production and the guideline for following this procedure.

c) A template for the feasibility study report for construction investments according to the Construction Law issued in 2014.

d) A detailed guideline for preparation of the contents of the feasibility study when investing in concrete brick production, including at least the following contents:

- A guideline for preparing the basic design[[1]](#footnote-2);

- A guideline for other contents of the feasibility study when investing in construction, which includes:

+ Determination of the need and the strategy for investment, objective of the construction investment, capacity and construction investment type;

+ Selection of construction location, area; solutions for land clearance and residential relocation;

+ Selection of sources of raw materials for production of concrete brick, how to design the mix proportion;

+ Selection of technology and equipments for production of concrete brick;

+ Determination of the labour demand, management strategy for conducting the project, operating and utilising the construction work;

+ Issues relating to technical infrustructure;

+ Sales strategy;

+ Assessment of impacts of the project on landscape, environment, construction safety, fire and explosion prevention and fighting;

+ Determination of total investment, financial analysis, risks, cost of construction work utilisation, assessment of socio-economic benefits of the project; suggestion of method of co-operation, supporting policies for conducting the project;

e) Guideline for application for mandatory product certification;

f) A list of legal normative documents relating directly to construction investment in concrete brick production;

g) Supporting policies for investment project in concrete brick production;

h) List of suppliers of concrete brick production line in Vietnam;

i) List of viable financing sources with guidance to access such financing sources;

j) Some examples of summary of investment projects conducted successfully.

3.4. A summary report in English detailing the survey results with recommendations and summarising the contents of the guidelines. The part of the survey results with recommendations in English shall be developed together with the deliverable 3.2.

**4. Scope of work**

4.1. Study relevant documents such as the project document and relevant outputs of the project " Promotion of Non Fired Brick Production and Utilization in Vietnam", results of the project, legal normative documents relating directly to formulating an investment project of NFB such as Investment Law, Construction Law, Tax Law, Land Law, Law on Environmental protection, etc...and others.

4.2. Survey of at least 5 investors who have already implemented NFB projects and assess the advantages and challenges of implementing such projects. The assessment shall be specific to each of the steps in establishing and operating an NFB production plant and for each type of production technology. This allows to determine the objective, content, and scope of the Technial Guideline which will be more practical and relevant for future investors.

4.3. Draft the “Technical guideline for investments in concrete brick production” with work content specified in Section 3.3.

4.4 Prepare a guideline for applying for mandatory product certification.

4.5. Analyse all relevant legal normative documents relevant for NFB investment projects, and highlight relevant contents.

4.6. Prepare a list of viable financing sources with guidance to access such financing sources.

4.7. Prepare a list of concrete brick equipment suppliers and related service providers in Vietnam with details of technologies and services provided, production capacity, etc.

4.8. Summarise few of the succesfully implemented NFB investment projects in Vietnam.

4.9. Prepare a summary report in English detailing the survey results with recommendations and summarising the contents of the guidelines. The part of the survey results with recommendations in English shall be developed together with the deliverable 3.2.

**5. Methodology and approach**

The consultants should fully understand the objective of the project, project implementaiton strategy and requirements of PMU on formulation of the Technical guideline, in order to develop a work plan for the assignment.

The consultants shall survey and understand clearly the current practices in investing in NFB production, which will help to develop guidelines that are closer to the requirements of investors.

The consultants will work closely with PMU, interantional technical spcialist, and other consultants during drafting the Guidelines.

1. **Work plan**

The duration of the contract is 7 months from June 2017.

| **No.** | **Activity and result** | **Deadline** |
| --- | --- | --- |
| 1 | Study relevant documents | 6/2017 |
| 2 | Survey at least 5 investors who have already invested in NFB projects and prepare a report assessing the advantages and challenges of investing in NFB production. | 6/2017 |
| 3 | Draft the technical guideline for preparing contents of feasibility study of the project, **including at least the following contents:** | 8 /2017 |
| 3.1 | Guideline for preparing a basic design |  |
| 3.2 | Determine the necessity and strategy of investment, object of construction investment, capacity and construction investment type; |  |
| 3.3 | Selection of construction location, area; solutions to land clearance and residential relocation; |  |
| 3.4 | Selection of sources of raw materials for production of concrete brick, how to design the mix proportion; |  |
| 3.5 | Selection of technology and equipments for production of concrete brick; |  |
| 3.6 | Determination of labour demand, management strategy for conducting the project, operating and utilising the construction work. |  |
| 3.7 | Issues relating to technical infrustructure; |  |
| 3.8 | Product selling strategy; |  |
| 3.9 | Assessment of impacts of the project on landscape, environment, construction safety, fire and explosion prevention and fighting; |  |
| 3.10 | Determination of the total of investment, financial analysis, risk, cost of construction utilisation, assessment of economic-social benefits of the project; suggestion of the method of co-oporation, supporting policies for conducting the project. |  |
| 3.11 | Guideline for application for mandatory product certification. |  |
| 4 | List of legal normative documents relating directly to construction investment in NFB production. | 9/2017 |
| 5 | A list and capacity profiles of NFB production line suppliers of in Vietnam. | 10/2017 |
| 6 | Prepare a list of viable financing sources with guidance to access such financing sources. | 10/2017 |
| 7 | Illustration of summary of some investment projects conducted successfully. | 11/2017 |
| 8 | Finishing the Draft and Prepare a summary report in English | 15/12/2017 |

Note: The above deadline is the point of time that the output products have been finalized after taking into account the expert’s comments.

**7. Required expertise and experiences**

- The consultant must have a bachelors degree in engineering in a field relevant to building materials, technology/equipments for building materials/NFB. Consultant with master or doctoral degrees are prefered.

- The consultant must have at least (5) years of experience in the design, procurement installation and monitoring of building materials projects.

- The consultant must have experience in NFB investment projects and on NFB production technology/equipment;

- The consultant can write English fluently.

**8. Remuneration**

- The remuneration will be based on the qualifications and experience of each consultant under the cost norms issued by UN in Vietnam, the Delegation of European Union to Vietnam and the Ministry of Planning and Investment.

- Other costs including costs associated for travelling outside the consultant's residential location to implement the contract, are paid as actual costs. Cost norms only are applied according to the provisions of HPPMG and the cost norms issued by UN organizations in Vietnam, the Delegation of European Union to Vietnam and the Ministry of Planning and Investment.

1. As defined in investment Law (2014) [↑](#footnote-ref-2)