

# Terms of reference (ToRs) for the procurement of services below the EU threshold

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<b>Preparation of Proforma and other related documents for Petrochemicals sector under the PAT scheme and feasibility study of other sub-sectors of the Petrochemical sector to include under the PAT scheme</b>	<b>Project number/ cost centre: 14.2298.9-001.11</b>
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## **0. List of abbreviations**

AVB	General Terms and Conditions of Contract (AVB) for supplying services and work 2018
ToRs	Terms of reference
BEE	Bureau of Energy Efficiency
IGEN	Indo-German Energy programme
PAT	Perform, Achieve and Trade
DC	Designated Consumer

## **1. Context**

The Federal Republic of Germany and the Government of the Republic of India have, under the Indo-German Technical Cooperation, have 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.

The Ministry of Power and Bureau of Energy Efficiency (BEE) are entrusted with the task of implementation of 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 market-based mechanism to improve energy efficiency in energy intensive large industries and facilitates through certification of energy savings which could be traded. This scheme known as Perform, Achieve and Trade (PAT) was expected to save about 6.686 million metric tonnes of oil equivalent (mMtoe) by 2014-15. Eight industrial sectors namely Thermal Power Plant, Iron & Steel, Fertilizer, Cement, Aluminium, Pulp & Paper, Textile and Chlor-alkali were included in PAT cycle I, where in about 478 industries (known as designated consumers (DCs)) were covered.

After the successful completion of PAT Cycle-I, the Government decided to notify PAT as a rolling cycle, in which new sectors and new DCs in existing sectors could be added. Thus instead of waiting for one cycle to be completed before notifying the next cycle it was decided that every year a new cycle would be notified for a three year period.

PAT II was notified with effect from 1st April 2016 for a three cycle i.e. up to 31st March 2019. PAT-II included 621 DCs covering 11 sectors including three new sectors (DISCOMS, Railways and Petroleum Refineries) with an overall estimated saving of 8.869 mMtoe. PAT-III, PAT-IV and PAT-V has also been notified following the same pathway in 2017, 2018 and 2019 respectively.

As petrochemical sector (cracker units) is a new sector under the PAT scheme, the proforma, normalizations, and other documents for this sectors has to be prepared. Also, BEE intends to conduct a study to estimate the distribution of energy consumption in the sub-sector of the Petrochemical sector thereby identifying the potential DCs for upcoming PAT Cycles. This study should further support BEE to develop overall methodology for calculating specific energy consumption along with identification of various factors affecting it and impact thereof.

## **2. Tasks to be performed by the contractor**

The contractor is responsible for providing the following services:

There are two objectives of the assignment

**A. To support in identification of the normalization factors, develop equations for the normalization factors, prepare consolidated proforma, for the Petrochemical sector (cracker units) notified under PAT cycle-IV**

The scope of work for is as follows:

- a) To study and enhance the data capture form (already with BEE)
- b) To provide input and participate in consultation workshops/ technical committee meetings, etc, for identification of normalization factors.
- c) To coordinate with BEE, GIZ, EIL, CHT, DCs, etc. and gather the information related to normalization.
- d) To develop normalization equations based on the inputs finalized.
- e) To integrate these normalization equations in the sector specific proforma as normalization sheets.
- f) To integrate the outcome of the normalization sheets into the summary sheet.
- g) To develop a comprehensive sector specific proforma which shall include, instruction sheet, general information sheet, summary sheet, Form -I, data capture sheet, the normalization sheets and any other sheet as may be required.
- h) Beta testing of the proforma by taking the actual data of all the DCs under this sector (the data shall be provided by BEE). This shall be followed by discussing the same in technical committee for BEE, and subsequent rectifications, modifications, etc. as needed.
- i) To prepare presentation explaining the final sector specific proforma.
- j) To address queries and concerns related to the sector specific proforma.
- k) To form a checklist for the data required to be filled in the proforma and the supporting documents required for the verification of each data, along with data check points.
- l) Attending workshops organized by BEE to explain the sector specific proforma.
- m) Development of Normalization document which shall include:
  - i) Sector specific write-up/ process details
  - ii) Details on normalization equations
  - iii) Detailed M&V guidelines
  - iv) Document Checklist
- n) To check the baseline verification reports (provided by BEE) for the Petrochemical DCs notified under PAT-IV.

**B. To conduct a feasibility study for inclusion of below mentioned sub-sectors of the Petrochemicals sector under the PAT scheme.**

A.	Basic major petrochemicals products	
1.	Synthetic Fibres	PSF, PFY, PIY, AF, NFY, NIY,
2.	Commodity Polymers	LDPE, HDPE, HDPE/ LLDPE, PP, PVC, PS/EPS
3.	Performance Plastics	EVA, SAN, ABS, PET Bottle Grade

4.	Fibre Intermediaries	Caprolactam, MEG, PX, PTA
5.	Synthetic rubbers	SBR, Butyl Rubber, PBR
6.	Aromatics	Benzene, Toluene, Phenol
7.	Others	PAN, LAB, Oxo-Alcohols

The scope of work is as follows:

- a) To study the table above and report the left-out categories, if any.
- b) To report the latest data of FY 2016-17, 2017-18 and 2018-19 on energy and production profiles. This will require visiting the plants falling in the category mentioned under the section “2 B” above. The list of plants has to be obtained by the bidder and get approved by BEE/GIZ.
- c) To prepare an overview report of each sub-sector (as mentioned above including left-outs) in India, covering every aspect in terms of energy consumption and production.
- d) To explain the process of each sub-sector through block diagrams, clearly mentioning the input-output energy/ raw materials and products.
- e) To segregate the number of plants in each sub-sector based on CPPs-Non CPPs and cogeneration (if any).
- f) To provide information of important stakeholders, all manufacturers, number of plants, major players, production capacity, production & energy consumption data, product categorization, major product, capacity utilization, energy efficiency levels, ownership structure, market scenario, analysis of energy consumption based on latest data or information in view of applicability of extending the sector into PAT Scheme, in the report.
- g) To provide the technology being used and technological development in last decade, energy saving potential and barriers to implementing energy efficiency measures along with available technology, and current regulatory and policy scenario, in the report.
- h) To analyse the result and provide statistical analysis of sub-sector specific information/data etc., along with source of data and information regarding concerned ministry and industry association, in the report
- i) To suggest the best probable threshold levels of energy consumption and number of plants above threshold, for each sub-sector with saving potential supported by statistics.
- j) To develop a basic data capture form which can cover the energy consumption, raw materials and production details of all the sub-sectors.

Note: Data provided by BEE/GIZ shall be kept confidential and should not be copied/used at any other place apart from this project requirements. Any copying of data other than permitted by BEE/GIZ, will lead to the termination of the project and attract legal actions.

Certain milestones, as laid out in the table below, are to be achieved by certain dates during the contract term, and at locations:

S.No	Milestone	Deadline/place/person responsible
A	Petrochemical (cracker units) normalization and proforma development	
1	Identification of normalization factors	2 months from contract
2	Draft normalization equations and proforma	3 months from contract
3	Final normalization equations and proforma	4 months from contract
4	Draft Normalization document	4 months from contract
5	Final Normalization document	5 months from contract
B	Feasibility study for inclusion of additional sub-sectors under the Petrochemicals sector in the PAT scheme	
1	Draft Feasibility report	3 months from contract
2	Final Feasibility report	4 months from contract

Period of assignment: From **Feb 2020** until **July 2020**

### 3. Concept

In the bid, the bidder is required to show how the objectives defined in Chapter 0 are to be achieved, if applicable under consideration of further specific method-related requirements (technical-methodological concept). In addition, the bidder must describe the project management system for service provision.

#### Technical-methodological concept

**Strategy:** The bidder is required to consider the tasks to be performed with reference to the objectives of the services put out to tender (see Chapter 1). Following this, the bidder presents and justifies the strategy with which it intends to provide the services for which it is responsible (see Chapter 0).

The bidder is required to present and explain its approach to **steering** the measures with the project partners and its contribution to the results-based monitoring system.

The bidder is required to describe the key **processes** for the services for which it is responsible and create a schedule that describes how the services according to Chapter 0 are to be provided. In particular, the bidder is required to describe the necessary work steps and, if

applicable, take account of the milestones and contributions of other actors in accordance with Chapter 0.

The bidder is required to describe its contribution to knowledge management for the partner and GIZ and promote scaling-up effects (**learning and innovation**).

The bidder is required to explain its approach for coordination with the GIZ project.

The contractor is responsible for selecting, preparing, training and steering the experts assigned to perform the tasks.

The contractor manages costs and expenditures, accounting processes and invoicing in line with the requirements of GIZ.

The contractor reports regularly to GIZ in accordance with the AVB of the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH from 2018

#### **4. Personnel concept**

The organization bidding for the tender must fulfil the following requirements:

- a) The organization must have energy related work experience in petrochemicals sector
- b) The organization must have work experience in at least 5 PAT sectors.
- c) The organization must have work experience in the PAT scheme for more than 4 years, (projects before Sep-2015 shall be considered).
- d) Work experience in preparation of evaluation proforma/ matrix/ forms for any energy related work in the sectors of PAT notified till 31<sup>st</sup> March,2019 will have added advantage.
- e) The organization must have experience in project management & consulting, Market Research, Techno-Economic feasibility and statistical analysis since last 10 years. (At least one project detail for each type as mentioned above shall be submitted with proposal)
- f) The organization should have Pan India presence (at least 4 offices in India) with minimum 10 permanent professionals out of which 3 must be having master's degree.
- g) Should have a minimum annual turnover of INR 1 crores (INR or its equivalent in foreign currency) from Consulting Fees in last two of the last three (3) years i.e. FY 2018-19, 2017-18 and 2016-17
- h) The organization must have completed at least 2 project in the Petrochemical sector of which at least 1 should be energy related project done in India, in last three years.
- i) The reference projects in the Petrochemical sector must be of INR 10 lakh or more.
- j) Work order copies/ completion certificate must be enclosed for all relevant projects.

#### **Team leader/ Lead Expert**

##### Tasks of the team leader

- Overall responsibility for the advisory packages of the contractor (quality and deadlines)
- Coordinating and ensuring communication with GIZ, partners and others involved in the project

- Personnel management, in particular identifying the need for short-term assignments within the available budget, as well as planning and steering assignments and supporting local and international short-term experts
- Regular reporting in accordance with deadlines

#### Qualifications of the team leader

The team leader or the lead expert should:

- a) be an engineering graduate and a certified energy auditor (2.1.1)
- b) be fluent in English and Hindi (2.1.2)
- c) have at least 15 years of work experience in industrial consultancy (2.1.3)
- d) Have at least 3 years of work experience in the PAT scheme (2.1.4.)
- e) Should have experience of at least 5 projects as team lead (2.1.5)
- f) Should have experience in carrying out feasibility study of new sectors for including under the PAT scheme (2.1.6)
- g) Should have experience of development cooperation projects (2.1.7)
- h) have at least 10 years of work experience in the field of energy, energy efficiency, industrial energy needs, report writing, etc. (2.1.8.)
- a) can work in a team.

#### **Expert 1**

##### Tasks of expert 1

- the task of the expert 1 shall include but not limited to overall technical inputs and other activities in accordance with chapter 2 of this tender

##### Qualifications of expert 1

Expert 1 should:

- a) be an engineering graduate (2.2.1)
- b) be fluent in English and Hindi (2.2.2)
- c) have work experience in the field of energy, energy efficiency, industrial energy needs, etc (2.2.3)
- d) should have at least 25 years of work experience in the Petrochemical sector (2.2.4)
- e) should have work experience in preparation of data capture form/ energy evaluation form for petrochemical plants/ sector (2.2.6)
- f) Should have working expertise in MS Excel and MS Word

#### **Expert 2**

##### Tasks of expert 2

- the task of the expert 2 shall include but not limited to analysis, preparation and refinement of the proforma in excel and other activities in accordance with chapter 2 of this tender.

##### Qualifications of expert 2

Expert 2 should:

- i) be an engineering graduate (2.3.1)
- j) be fluent in English and Hindi (2.3.2)



- k) should have at least 5 years of work experience in industrial consultancy (2.3.3)
- l) have at least 3 years of experience in energy and energy efficiency related work (2.3.4)
- m) be proficient in MS Excel up to Macro level, along with MS word and power point (certificate to be provided, if applicable) (2.3.8)
- n) should have work experience in preparation of Macro level excel sheets for specific projects (2.3.6.)
- o) can work in a team.

### **Expert 3 and 4**

#### Tasks of expert 3 & 4

- the task of the expert 3 & 4 shall include but not limited analysis, preparation and refinement of the reports and other activities in accordance with chapter 2 of this tender

#### Qualifications of expert 3 & 4

Experts 3 & 4 should:

- a) be an engineering graduate (2.4.1, 2.5.1)
- b) be fluent in English and Hindi (2.4.2, 2.5.2)
- c) should have at least 5 years of work experience in industrial consultancy (2.4.3, 2.5.3)
- d) have at least 3 years of experience in energy and energy efficiency related work (2.3.4)
- e) Should have working expertise in MS Excel and MS Word
- f) can work in a team.

The bidder must provide a clear overview of all proposed short-term experts and their individual qualifications.

## **5. Costing requirements**

### **Assignment of personnel**

Tentative man-days requirement is mentioned below. However, this may differ as per the understanding and approach of the bidder

Team leader : Assignment for 45 expert days  
Expert 1 : Assignment in country of assignment for 25 expert days  
Expert 2 : Assignment in country of assignment for 20 expert days  
Expert 3 & 4 : Assignment in country of assignment for 60 (in total) expert days

### **Travel**

The bidder is required to calculate the travel by the specified experts and the experts it has proposed based on the places of performance stipulated in Chapter 0 and list the expenses separately by daily allowance, accommodation expenses, flight costs and other travel expenses.

## **6. Inputs of BEE/ GIZ and other conditions**

- a) The bidder is required to submit the detailed schedule of activities for completion as per section 3 of this ToR
- b) The schedule shall include the responsibility matrix as well and shall indicate the areas where intervention/ support from GIZ/BEE is needed.
- c) Successful bidder shall work from their own premises and submit the status w.r.t. to schedule every 15 days.
- d) The consultant shall station one of the team members in BEE's premises on two-day a week basis (Monday and Tuesday), till the time the draft reports are submitted.
- e) Monthly review meetings may be held every month in Delhi to update on the proceedings, hold-ups, etc.
- f) GIZ/ BEE shall provide the data/ document available with them. The data which are not available with BEE/GIZ shall be collected by the bidder from industries, associations, reference journals, guide materials, and other stakeholders. However, BEE will facilitate the same.
- g) The bidder can make suitable assumptions where it is not possible to expedite the data. However, such assumptions shall have proper basis and prior approval shall be taken by GIZ/BEE
- h) The workshops shall be organized by BEE/GIZ. However, the bidder shall support is proper execution of the workshops.
- i) The deliverables shall be submitted in soft copy only.

## **7. Requirements on the format of the bid**

The structure of the bid must correspond to the structure of the ToRs. In particular, the detailed structure of the concept (Chapter 3) is to be organised in accordance with the positively weighted criteria in the assessment grid (not with zero). It must be legible (font size 11 or larger) and clearly formulated. The bid is drawn up in English.

The complete bid shall not exceed 10 pages (excluding CVs).

The CVs of the personnel proposed in accordance with Chapter 4 of the ToRs must be submitted using the format specified in the terms and conditions for application. The CVs shall not exceed 4 pages. The CVs must clearly show the position and job the proposed person held in the reference project and for how long. The CVs can also be submitted in English.

If one of the maximum page lengths is exceeded, the content appearing after the cut-off point will not be included in the assessment.