

**CONSULTING SERVICES CS37**  
**TERMS OF REFERENCE**  
**NATIONAL CONSTRUCTION EQUIPMENT SPECIALIST**  
**(DELIVERABLE BASED 4 PERSON MONTHS, INTERMITTENT)**

**1. MINIMUM QUALIFICATIONS REQUIREMENTS**

The National Construction Equipment Specialist (the Specialist) will have a bachelor or higher degree in engineering, technology or other disciplines relevant to building construction industry. The specialist should possess at least 4 years of experience in procuring, installing, operating and maintaining equipment and tools for construction industry and demonstrated knowledge and/or experience of training and testing equipment and tools for Technical and Vocational Education and Training (TVET). Excellent knowledge of the English language is required, knowledge of both English and Mongolian technical terms specific to the industries is required.

**2. EXPECTED COMMENCEMENT AND COMPLETION OF THE SERVICES**

Expected Commencement – 25 January 2018, expected completion – 25 December 2018.

**3. OBJECTIVE OF THE ASSIGNMENT**

Ministry of Labor and Social Protection is implementing Skills for Employment Project (SFEP) with financing from Asian Development Bank (Loan no. 3243 MON). SFEP aims to enhance the responsiveness of the TVET system to labor market demand in the Priority Sectors (agriculture, construction, and road and transportation). SFEP supports strengthening of training and testing facilities of up to 12 TVET providers including those which may host functions of assessment and certification center (hereafter collectively the “Beneficiary Institutions”) associated with construction training programs. The objective of the assignment is to prepare technical documents required for the procurement of training and testing equipment and tools, and textbooks and other training and learning material for construction training programs related to 5 occupations (see table attached, hereafter the “Occupations”) in construction industry, in collaboration with the International Construction Equipment Specialist.

**4. TERMS OF REFERENCE**

**Detailed Tasks/Expected Output**

The Specialist, in close cooperation with the MLSP, Beneficiary Institutions, professional associations and employers, the Project Implementation Unit, and other stakeholders as necessary, reporting to the Procurement Specialist of the Project Implementation Unit of SFEP, will:

1. Review competency-based curriculum documents for each of the Occupations.
2. Conduct desk survey of the Beneficiary Institutions to assess (i) Condition of training equipment and tools; (ii) Procedures and practices for replacing spare and replacement parts and their funding; (iii) the Beneficiary Institution’s capability to use and repair the current training equipment and tools; and (iv) Reasons of equipment and tools that are currently not operational. **Deliverable 1 – Mongolian Language.**
3. Visit at least 3 Beneficiary Institutions to verify the above desk survey data. **Deliverable 1 - Mongolian Language.**
4. Collect and review, if necessary and upon request, technical documents for the procurement of training and testing equipment and tools used under projects financed by international financial institutions.
5. Review and comment on draft technical documents for the procurement of training and testing equipment and tools for the Occupations prepared by the International Construction Equipment Specialist such as: list of equipment and tools, including hygiene and safety items for each occupation, prepared taking into account the requirements specified in competency-based curriculum documents; technical specifications; cost estimate; standards; spare parts and consumables of equipment and tools; licensing and software renewal/update requirements qualification requirements for prospective equipment suppliers; concept sketch plan which details the layout of

equipment with dimension and weight, furniture, exhibits, practice area etc., and building requirements for each of major equipment in terms of space, foundation, electrical, ventilation, water, sewage, internet and other demands etc. **Deliverable 2 – Mongolian and English Languages.**

6. Present and discuss Deliverable 2 with the relevant stakeholders (MLSP, agency, TVET providers, professional associations, and employers) for their review and comment and incorporate the comments into the final technical documents. **Deliverable 3 – Mongolian and English Languages.**
7. Submit Deliverable 3 to the Asian Development Bank for their comments. Reflect the comments. **Deliverable 4 – Mongolian and English Languages.**
8. Prepare technical documents for procurement for each of the Beneficiary Institution based on Deliverable 4 and have them approved by MLSP. **Deliverable 5 – Mongolian and English Languages.**
9. Prepare recommendations, including specs, parts no., and cost estimate to make non-functioning equipment and tools for the Occupations at the Beneficiary Institutions operational. **Deliverable 6 - Mongolian and English Languages.**
10. Submit Deliverable 5 and 6 to the Asian Development Bank for their comments. Reflect the comments. **Deliverable 7 – Mongolian and English Languages.**
11. Prepare list of textbooks, teaching and learning materials complete with, but not limited to the author name, book or material name, contact details of the open source or copy right holder for the Occupations in the Mongolian language or foreign language that can further be translated into the Mongolian language and used for training in Mongolia by the TVET providers. **Deliverable 8 – English Language – within 6 calendar days from the comment date.**
12. Assist to ensure that the supplied and installed equipment and tools are in accordance with the supply and install contract. Conduct site visits to at least 5 Beneficiary Institutions to inspect equipment and tools delivered and installed by the suppliers, and prepare inspection reports per site visit. **Deliverable 9 - Mongolian and English Languages.**

#### **5. CLIENT’S INPUT AND COUNTERPART PERSONNEL**

1. Services, facilities and property to be made available to the Consultant by the Client: table, chair, internet at Project Implementation Unit office.
2. Professional and support counterpart personnel to be assigned by the Client to the Consultant: Not applicable.
3. Client will provide the following inputs, project data and reports to facilitate preparation of the reports: All the data available with MLSP.

**15 МЭРГЭЖЛИЙН ЖАГСААЛТ, САЛБАРААР / LIST OF 15 OCCUPATIONS BY SECTORS**

| <b>Салбар/<br/>Sector</b>                | <b>№</b> | <b>Мэргэжил / Occupation</b>  | <b>Тайлбар / Remark</b>   |
|--|----------|---|---|
| Зам тээвэр<br>Road and<br>Transportation | 1        | Автозам, гүүр барилгын ажилтан /замчин/<br>Road and bridge construction worker  | Гүүр, хонгил, гарц, төмөр замын гарам, үерийн ус зайлуулах хоолой зэргийг оруулах<br>Includes but not limited to construction of bridges, tunnels, gates/exits, railway crossings, culverts   |
|  | 2        | Зам, барилгын машин механизмын оператор<br>Road, construction machinery operator  | Булдозер, экскаватор, ачигч, самосвал, грэйдэр, асфальт дэвчсэгч, индүү /тандем, макадам, дугуйт, чичиргээт/, цохилтот компактор, бетон зуурагч машин, хуучин хучилт бутлагч, зүсэгч, хүйтнээр дахин боловсруулагч<br>Includes but not limited to Bull Dozer, excavator, loader, dump truck, grader, asphalt paver/finisher, roller (tandem, macadam, tire, vibrating), percussion compactor, concrete mixer truck, old pave crusher and cutter, concrete recycling cold pavement |
|  | 3        | Автомашины засварчин<br>Autocar repairman   | Агрегат, эд ангийн засвар, тохиргоо, зүгшрүүлэлт, мөн кузов засвар<br>Includes unit, parts and assembly repair, adjustment, tuning; and car body repair   |
|  | 4        | Зам, барилгын материал болон барилгын ажлын лаборант<br>Laboratory technician road and construction material and construction works |   |
| Хөдөө аж<br>ахуй<br>Agriculture          | 1        | Farmer, greenhouse<br>Хүлэмжийн аж ахуйн фермер   | Зуны болон өвлийн хүлэмж /4 улирал/<br>Includes summer and winter greenhouse (4 season)   |
|  | 2        | Хүнсний ногооны фермер<br>Farmer, vegetable   | Хүнсний ногооны төрөл, хүний бие эрүүл мэндэд шаардлагатай эрдэс бодисын агууламж судлал, байгалийн бүс бүслүүр бүрээр хөрс судлал, үр үрсэлгээний тохирцын агуулга агуулгыг бүрэн тусгах, усжуулах систем<br>Types of vegetables, examination of mineral substances necessary for human body and health, soil investigation by various natural zones, seed study, irrigation etc.  |
|  | 3        | Малын бага эмч<br>Veterinary technician   | Малын бага эмч бэлтгэхэд шаардагдах агуулгыг цогцоор нь тусгах. Байгалийн бүс бүслүүрээр элбэг тохиолдох мал, амьтны гаралтай өвчин, эмгэг, сүүлийн үеийн угаалга, тарилга, тулга, эм, вакцинийг судлах агуулгыг тусгах<br>Training veterinary technician with the full content, study of   |

| Салбар/<br>Sector       | № | Мэргэжил / Occupation  | Тайлбар / Remark   |
|-------------------------|---|--|--|
|                         |   |  | livestock and animal diseases, disorders by natural zones and areas, washing, injections, vaccines, treatment and prevention from diseases etc.  |
|                         | 4 | Эрчимжсэн амьтны аж ахуйн фермер /гахай/<br>Farmer, intensified animal farming (pig farm)                              | Гахайны аж ахуй эрхлэхэд шаардлагатай бүхий л агуулгыг бүрэн тусгах, гахай, шувуу /ханиад/-аас гаралтай халдварт өвчин судлал<br>Include all content for training of farmers of pig farming, Study and treatment of pig/bird (for example bird flu) borne diseases, for example.   |
|                         | 5 | Ойжуулалтын техникч / Ойн арчилгаа, ашиглалтын ажилтан<br>Forestation technician / Maintenance and Conservation worker | Байгалийн бүс, бүслүүрийн хувьд говь, хээр, ойт хээрийн бүсийн хөрс, ус, чийг, цаг уурын орчныг судалсны үндсэн дээр тохирох модлог ургамлын үр, үрсэлгээг хийх арга технологи<br>Includes also forestation technologies and methods by natural zones such as gobi, steppe, forest-steppe, survey of precipitation, soil, and climatic conditions. |
|                         | 6 | Ноос, ноолуурын боловсруулалтын технологийн ажилтан<br>Wool, cashmere processing technology worker                     | Самнах, хяргахаас эцсийн бүтээгдэхүүн – иж бүрэн процесс<br>From combing and shearing to the final product – full process  |
| Барилга<br>Construction | 1 | Барилгын засал-чимэглэлчин<br>Interior, exterior – finisher  | Барилгын бүх төрлийн засал чимэглэл, гипсэн тааз, чигжээс, тосон будаг, эмульс, обой наах, өнгөлгөө хийх,, замаск татах, будах, плита наах<br>Include all types of decoration and finishing works, suspension ceiling, plastering, wallpaper, paintings, tiles   |
|                         | 2 | Эрчим хүчний хэмнэлттэй барилгын бүтээц угсрагч<br>Energy-efficient building structure (blocks) assembler              | Бүх төрлийн материалаар барилгын өнгөлгөө, дулаалга хийх, түүний дотор шат, вандан угсрагчийн чадамжийг оруулах, ухаалаг байшингийн удирдлагын тогтолцоог оролцуулан<br>Includes assembling of all types of insulation, and finishing, and scaffolding, including management system for smart house  |
|                         | 3 | Барилгын цахилгаанчин<br>Construction electrician/technician   | Холбоо дохиоллын элементийг оролцуулан, энгийн PLC, контроллерийн хамт<br>Including elements of signal and communication, with simple PLC and controllers  |
|                         | 4 | Хуурай хийц угсрагч<br>Dry construction installer/assembler  | Барилгын угсралт болон хуучин барилгын өргөтгөл, шинэчлэлийн засварын явцад гүйцэтгэх ажлын  |

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|-------------------|---|--|---|
|                   |   |  | <p>даалгавар, техникийн зураг төслийн дагуу ажлын гадаргуу болон үндсэн хийц эдлэл, эмжээр, хүрээг бэлтгэх, дулаан, чийг, дууны тусгаарлалт хийх, зүсэх бэхлэх явц</p> <p>For new building, extension and renovation works, including main structure, trims, frames, insulation, moist and noise protection according to drawings</p>   |
|                   | 5 | <p>Барилгын машин механизмын операторч<br/>Construction machinery and plant operator</p> | <ul style="list-style-type: none"> <li>- суурин болон дугуйт бетон зуурмаг зуурагч /mixer/</li> <li>- суурин болон дугуйт зуурмаг шахагч /pump/</li> <li>- автомат болон хагас автомат компрессор</li> <li>- барилгын талбай дээр ашиглах бетон зүсэгч, бетон зуурагч, бетон өнгөлөгч, бетон тэгшлэгч, хавтгай нягтруулагч, цохилтот нягтруулагч гэх мэт</li> <li>- stationery and wheeled concrete mixer</li> <li>- stationery and wheeled concrete pump</li> <li>- automatic and semi-automatic compressor</li> <li>- tools and equipment such as but not limited to concrete cutter, concrete mixer, concrete finisher, concrete leveler, flat compactor, percussion compactor etc.</li> </ul> |