

PC-I PROFORMA

GOVERNMENT OF KHYBER PAKHTUNKHWA



ADP NO: 791/170146

SCHEME TITLE

***“MODERNIZATION OF CHECKING FACILITIES
AND MOBILIZATION OF INSPECTING STAFF
OF WEIGHTS & MEASURES CELL”***

Weights & Measures Cell
DIRECTORATE OF LABOUR
P E S H A W A R

ESTIMATED COST RS.52.5054 Million

PC-1 FORM

(SOCIAL SECTORS)

1. Name of the Project	Modernization of Checking Facilities & Mobilization of Inspecting Staff of Weights & Measures Cell (ADP S.No.791/170146)
2. Location.	Khyber Pakhtunkhwa Province
3. Authority Responsible for:	Government of Khyber Pakhtunkhwa, Labour, Department.
i. Sponsoring.	
ii. Execution.	Directorate of Labour Khyber Pakhtunkhwa.
iii. Operation and Maintenance	Directorate of Labour Khyber Pakhtunkhwa.
iv. Concerned Federal Ministry.	Ministry of Science & Technology (MOST) (At Federal level, the Weights & Measures Subject/ Metrology is Dealt with by the MOST)
4. Plan Provision.	ADP Cost <u>Rs.50.96</u> million. Allocation <u>Rs.9.00</u> million in current Financial Year (2017-18) Estimated Cost <u>Rs.52.5054</u> million for the ADP 2017-18 and 2018-19.
5. Project objectives and its relation-ship with Sectoral Objectives	<ol style="list-style-type: none"> 1 To modernize the checking equipment and inspection mechanism for Measurement of Quantity of commodities. 2 To build capacity and mobilize the inspecting staff. 3. To implement the Weights & Measures Act and facilitate mobility to the inspecting staff in unexplored far flung areas of the province. 4. To adopt the latest technology equipment for checking of CNG stations. 5 To eliminate the Environmental and Safety Hazards created due to use of present conventional / Gravimetric equipment for CNG by replacing them with Micro Motion Master Meter (latest technology equipment). 6 To stop the Financial Loss of the station's owners and Wastage of Natural Resources caused by the present Gravimetric method of checking of CNG Dispensers. 7 To ensure delivery of correct quantity of CNG and other commodities to the consumers in far flung area of the province.

<p>6. Description, Justification and technical Parameters.</p>	<p>6.1 <u>MAJOR COMPONENT OF THE PROJECT</u></p> <p>The Scheme/Project consists of two major parts.</p> <p>Part-I PROVISION OF STANDARD WEIGHTS & MEASURES EQUIPMENTS AND LATEST TECHNOLOGY CNG CHECKING EQUIPMENTS</p> <p>Part-II TRANSPORT FACILITIES TO THE INSPECTING STAFF(Mobile Laboratory Unit).</p> <p>Part-III MANPOWER.</p> <p style="text-align: center;">PART-I</p> <p>6.1.1 PROVISION OF STANDARD WEIGHTS & MEASURES AND LATEST TECHNOLOGY CNG CHECKING EQUIPMENTS</p> <p><u>Introduction</u></p> <p>All Commercial Weights & Measures being used in trade and commerce i.e in shops, industrial and commercial establishments, POL pumps, CNG filling stations are verified/inspected under the Khyber Pakhtunkhwa Standard Weights & Measures Enforcement Act/Rules 1976. The process of inspection/verification is to calibrate/compare the commercial weights & measures with the standard weights & measures. If any variation or violation is found during course of inspection the owner is prosecuted under the law. Upon verification of weights & measures the owner pays service charges in shape of verification fee to the inspecting staff on issuance of receipt on prescribed format. The cell recovers millions of rupees every year and contributes to the provincial exchequer.</p> <p>So the function of the Weights & Measures Cell is to protect the rights of purchasers as well as revenue generation. Besides functions assigned under the law, the cell also facilitates the district administration in case of complaints and take immediate action.</p>
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	<p>6.1.2 <u>PROVISION OF LATEST TECHNOLOGY CNG CHECKING EQUIPMENTS.</u></p> <p>(a) <u>Verification of CNG Dispensers is a legal requirement.</u></p> <ul style="list-style-type: none"> • Under Section -11 read with Section-18 and Rules-10 & 17 of the Khyber Pakhtunkhwa Standard Weights & Measures Enforcement Act, 1976 and the rules made there-under, like all commercial weights & measures and other measuring means, the CNG dispensers are subject to periodical verification / re-verification and stamping by the Provincial Weights & Measures Cell of the Labour Department, on levying prescribed fee. • This process besides guarantying protection to the consumers, is a source of the Provincial Own Receipts under the Weights & Measures Act 1976. <p>(b) <u>CNG Stations in Khyber Pakhtunkhwa & their impact on Provincial Receipts.</u></p> <ul style="list-style-type: none"> • At present, there are about 580 Operational CNG stations in Khyber Pakhtunkhwa (having about 1740 dispensers installed in these stations) in the Districts of Peshawar, Mardan, Swabi, Nowshera , Charsadda, Kohat, Hangu, Karak, Swat, Malakand Haripur, Abbot Abad , Mansehra and Bannu (see Annex-I). • A large number of stations are under construction in the above mentioned Districts and with the expansion of natural gas to other districts (specially D.I.Khan, Bannu & Lakki) in future, the number of CNG stations will increase further . • On the basis of present rate of verification fee (Rs.3000/- per dispenser) and the No. of Dispensers in the project covered areas, receipts of about Rs.5.22 million will be collected annually from this sector (1740 x Rs.3000= Rs.5.22 m) <p>(c) <u>Testing Methods for CNG Dispensers.</u></p> <p>All over the world, the Master Meter Testing Method and Gravimetric Testing Method are used for checking of CNG Dispensers.</p> <p>(1) <u>THE GRAVIMETRIC TESTING METHOD.</u></p> <ul style="list-style-type: none"> • In our country, including this province, presently the Gravimetric Testing Method is used for checking of CNG Stations with the help of the Conventional Standard Equipment.
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- This method is otherwise a perfect method for checking of CNG Dispensers but in this case, disposal of the gas taken out of a dispenser during checking is a big issue i.e. the CNG once taken out of a dispenser, because of being at very high pressure (about 200 bars or 3000 PSI), can neither be injected back into the system nor filled into a vehicle safely.
- Therefore in order to empty the cylinder, the inspecting officer has no option but to vent this CNG into the open air which in turn requires a safer place in the gas station (off the road-side where there are no vehicles and people at all). However, this venting of CNG into the open air ,in turn , causes adverse effects.

Note:- Detailed explanation in respect of this method is given in **Annex-II** and photo of equipment and its practical use is given in **Annex-III**.

1.1 COST BENEFIT ANALYSIS OF GRAVIMETRIC TESTING METHOD.

(i) Environmental Hazards.

The CNG (Compressed Natural Gas) comprises (besides other impurities like sulphur etc.) about 90-95 % Hydrocarbons (70-90% Methane-CH₄, 5-15% Ethane-C₂ H₆, Propane-C₃ H₈ & Butane-C₄H₁₀) which cause a Green House Effect.

(ii) Safety (life & property) Hazards.

Any time, a mishap may occur which may endanger life of the near-by people including the Station staff, the checking staff and the gas station as well as the vehicles present on the gas station. Therefore the venting of CNG into the air is causing serious Environmental as well as Safety Hazards.

(iii) Financial Loss to the Station Owners and wastage of natural resources.

- During checking for annual verification which is a legal requirement, a CNG dispenser must be checked at least three times for knowing an average or a mean value of the error if any.
- Each time, about (7 kg x 3= 21 kg) of CNG is taken out of a dispenser/nozzle during checking which, at the present rate, costs about (21 kg X Rs.84/- Rs.1764/-). On venting this much CNG into the air, it causes so much financial loss per dispenser per annual verification/per year to the station owners.

- Besides the annual verification, occasional surprise inspections (once or more) as follow up action to ensure observance of law by the owner / user, are also required to be made.
- If inspection is made only twice a year and a dispenser is checked only one time (against the three times for annual verification), an additional financial loss of (7 kg x2 x Rs.84= Rs.1176/-) per dispenser per year will occur to the station owners.
- The total real financial loss to a station owner will depend on the number of dispensers installed in a CNG station.
- Venting of this much CNG Gas into air can cost financial loss of Rs.5.0m per annum as well as loss of natural resources. Detail of financial loss and wastage of natural resources is at **Annex-IV**.
- On account of such losses, the owners are reluctant to provide inspection facilities to the inspecting staff.

(2)

MICROMOTION MASTER METER TESTING METHOD

This is the latest technology equipment used for checking quantity of CNG. This equipment is used in series i.e in between dispenser to be checked/verified and vehicle to be fueled (buying CNG). The gas taken out during checking is, on the one hand, directly measured by both the standard (Micro-Motion Master meter) equipment and the dispenser simultaneously, and on the other hand, filled in the vehicle and not wasted by venting in the air as is done in the case of gravimetric method.

2.1

COST BENEFIT ANALYSIS OF MICROMOTION MASTER METER TESTING METHOD.

- This is the latest method recently adopted for checking of CNG Dispensers. Despite its expensiveness; it is simpler, safer and neither wastes natural resources nor gives financial loss to CNG station owner.
- In this method, a latest technology standard equipment called the Micro-Motion Master Meter is used which have the best quality and higher class of accuracy & metrological characteristics.

- The Master Meter Kit is installed in series with the Dispenser to be checked and the vehicle getting CNG fuel. Therefore, the CNG taken out of the Dispenser for checking, on the one hand, is directly measured by both the Dispenser's meter and the Standard Micro Motion Master Meter simultaneously and is also filled in the vehicle and thus it is not wasted as it occurs in case of checking by the Gravimetric/existing method.

Note: - See **Annex-V** and **Annex-VI** for details of Master Meter Testing Method and Photo of Master Meter Kit and its practical use.

2.2 Mode of Adoption of the Latest Technology Equipment in Khyber Pakhtunkhwa.

The Department because of the above mentioned merits / demerits of the two methods wants to replace the existing method (1st method) by the 2nd method by adopting the latest technology equipment in place of the existing Gravimetric equipment. The merit of the latest technology equipment are as under:

- ✓ No need of venting CNG into the air.
- ✓ No financial loss to the CNG owners.
- ✓ No loss of natural resources.
- ✓ This method is safe and environment friendly.

2.3 Basic Requirement for adoption of latest equipment.

(i) Mobile Verification Units.

The latest technology equipment because of its sensitiveness / delicateness, weight and high cost needs Mobile Units. These mobile units will not be limited to CNG inspection/verification but they will also be used to carry the standard weights & measures for inspection and verification of POL pumps, shops and other industrial units as well.

Part-II

TRANSPORT FACILITIES TO THE INSPECTING STAFF (Mobile Laboratory Unit).

(A) Non availability of transport facilities

The inspectors are required to verify/inspect the weights & measures in markets, bazaars, factories and POL pumps with the standard weights & measures. These standard weights & measures are periodically verified by NPSL by charging thousands of rupees. The weight of one box of mass standard is more than 20 kg. Apart from this length measures capacity measures milk measures etc are to be carried to the field. The inspectors are unable to carry these standard in hands or in public transport because these are standard equipment and are very sensitive and cost in millions of rupees. It becomes impossible to protect these from damaging in public transport.

In most cases an inspector is responsible for one or two districts. The markets are situated very far from one another and it becomes impossible for an inspector to visit each and every shop. So the provision of transport facilities will enhance the efficiency of the Inspectors which is in the best interest of general public. Detail of existing vehicles is at **Annex-VII**

(B) Non availability of inspection facilities and their impact on provincial receipts

Due to non-availability of inspecting mechanism i.e standard weights & measures and mobile means approximately 50000 shops and establishment in different areas are uncovered. If these are covered effectively then receipts of about Rs. 10 million will be added to the provincial exchequer. Besides receipts, the rights of general public/purchasers would be ensured and commercial weights & measures used in the markets would also be standardized. Detail of existing equipments is at **(Annex-VIII)** and required equipment and vehicles is at **(Annex. IX)**.

Part-III **MAN POWER**

Requirement of Drivers

The weights and Measures Cell needs 10 No; of Drivers for the 10 vehicles (8 Suzuki bolan and 2 Staff car for Weights and Measures Cell) but the Finance Department agreed upon only 8 Drivers and 8 Suzuki Bolan and regretted 2 Staff Car. After completion of the project these posts alongwith vehicles will be shifted from project to regular budget 2019-20.

Training of Inspecting Staff.

Under Rule-21(iii) the inspecting staff is required mandatory training relating to inspection/verification of weights, measures, weighing and measuring instruments . Training would be arranged for existing as well as newly appointed 6 inspectors at National Physical & Standards Laboratory (NPSL) Islamabad and Hydrocarbon Development Institute of Pakistan (HDIP) Islamabad.

7. Capital Cost Estimates

- **Date of Estimation of Project Cost: - .**
- The cost is estimated on the basis of information obtained from the concerned firms/companies dealing with the relevant items.
- **Year wise/Component wise Physical Activities.**

YEAR 2017-18	Remarks
a). Formation of Departmental Purchase / Inspection Committee.	a). The completion of activities will depend on availability of funds.
b) Arranging Training for staff.	b). Purchases will be made in light of Khyber Pakhtunkhwa, Procurement of Goods, Works and Services Rules 2003
c) Purchase of standard weights & measures from NPSL.	
d) Floating tenders for purchase of vehicles.	c). Recruitment of staff will be made in light of relevant rules meant for recruitment of staff of Developmental projects.
e) Recruitment of drivers	
f) Floating tenders for purchase of CNG equipment.	d). The project will be completed on 30-06-2019 subject to release/availability of funds.
g) Evaluation of offers by a technical committee.	
h) Starting practical work of verification of CNG Dispensers (with latest technology equipment).	

• **Year/ Component-Wise Financial Phasing.**
(Rs. In Million)

	Components	Grand Total	2017-18			2018-19		
		52.5054	Total	Local	FEC	Total	Local	FEC
A	<u>POL EQUIPMENT</u> 5 Liter Volume measures cylinders 200000x15=30,00,000	<u>3.0</u>	<u>3.0</u>	<u>3.0</u>	-	-	-	-
B	<u>CNG Equipment.</u> i). 13 No. of Micro Motion Master Meter. 3000000 x 13=Rs.3,90,00,000	<u>39</u>	<u>39</u>	<u>39</u>	-	-	-	-
	<u>Training</u> <u>Training to</u> <u>Incoming staff</u>	<u>0.6</u>	<u>0.6</u>	<u>0.6</u>	-	-	-	-
C	<u>Vehicles.</u> 8 No. of Suzuki Bolan Van 7,35,000 x 8 =Rs.5880000 Provision for escalation=5,88,000 (5.8m)	<u>5.88</u>	<u>5.88</u>	<u>5.88</u>	-	-	-	-
D	<u>Salary Component</u> <u>Annex-(X)</u> <u>Pay and</u> <u>allowances(18</u> <u>months</u>	<u>2.3184</u>	<u>0.644</u>	<u>0.644</u>	-	1.6744	1.6744	
E	Non Salary component Annex- (X) Maintenance of Machinery & Equipment, Maintenance & Registration of Vehicles, POL charges, Publicity & Advertisement Charges, Other charges etc.	<u>1.707</u>	<u>0.5</u>	<u>0.5</u>	-	1.207	1.207	
	<u>Grand Total</u>	52.5054	49.624	49.624	-	2.8814	2.8814	

<p>8. Annual Operating and Maintenance cost after completion of the project.</p>	<p>Total Annual Recurring Expenditure= Rs. 7.4 million</p> <table border="1" data-bbox="506 254 1261 590"> <tr> <td>Total pay and Allowance</td><td>3.6 million</td></tr> <tr> <td>Total contingencies (Non salary component)</td><td>3.8 million</td></tr> <tr> <td>Grand Total</td><td>7.4 million</td></tr> </table> <p>The project on completion during 2018-19 will be converted from Development to Non Developmental side for 2019-20 and on ward and thus the annual recurring expenditure will be borne by the provincial Government from revenue side. Each post of driver shall be shifted to concerned district office of Inspector Weights and Measures.</p>	Total pay and Allowance	3.6 million	Total contingencies (Non salary component)	3.8 million	Grand Total	7.4 million
Total pay and Allowance	3.6 million						
Total contingencies (Non salary component)	3.8 million						
Grand Total	7.4 million						
<p>9. Demand and supply analysis</p>	<p>Presently there are approximately 50000 shops and establishment in the uncovered area of Khyber Pakhtunkhwa and for the 580 operational CNG Stations (having about 1740 dispensers) the Weights and Measures Cell has no proper mechanism for checking of the quantity of CNG because of lack of latest technology of Micro Motion Master Meter, lack of proper facilities of staff, equipment and transportation. As such there is need for checking/coverage of these areas with proper capacity building of the Weights & Measures Cell. In nutshell there is zero/ low supply against the demand.</p>						
<p>10. Financial Plan and mode of financing</p>	<ul style="list-style-type: none"> ➤ Equity 100% by Provincial Government through its ADP for 2017-18 and 2018-19. ➤ Debt NIL ➤ Grants along with source NIL ➤ Weighted cost of Capital NA <p>The Project is being financed by the Provincial Government of Khyber Pakhtunkhwa through its ADP for 2017-18 and 2018-19.</p>						

11. Project Benefits and Analysis	11.1.	Financial.									
	11.1.1.	<u>Provincial Receipts.</u> <ul style="list-style-type: none">• The Weights & Measures Cell will focus on inspection and verification of Weights & Measures Weighing and measuring instruments including CNG dispensers. Therefore, besides improvement in service for providing better protection to the consumers, the Provincial Own Receipts of the Weights & Measures Cell, will increase sufficiently.• The tentative receipts from the project covered sector is estimated as under. <table><tr><th>S.#</th><th>Sector</th><th>Total Receipts</th></tr><tr><td>1.</td><td>Shops & Establishment</td><td>Rs.13.8m</td></tr><tr><td>2.</td><td>CNG Dispensers.</td><td>Rs.7.14 m</td></tr></table> <p>Detail of tentative receipt is at Annex-XI.</p>	S.#	Sector	Total Receipts	1.	Shops & Establishment	Rs.13.8m	2.	CNG Dispensers.	Rs.7.14 m
	S.#	Sector	Total Receipts								
	1.	Shops & Establishment	Rs.13.8m								
	2.	CNG Dispensers.	Rs.7.14 m								
	11.1.2	<u>Stoppage of Financial loss/ Wastage of Natural Resources</u> <p>As explained in Article C(1.1)(iii) with use of Micromotion Master Meter</p> <ul style="list-style-type: none">• Financial loss of Rs.4.81 m per annum could be avoided.• Wastage of natural resources could be eliminated.									
	11.1.3	<u>Social Benefits with indicators</u> <p>Implementation of the project will</p> <ul style="list-style-type: none">• Eliminate chances of environmental and safety hazards with regard to CNG• Better protection to the consumers in shape of delivering correct quantity of commodities to the purchases/consumers in far flung areas									
	11.1.4	<u>Employment Generation (direct and indirect)</u> <p>Direct: Implementation of the project will generate 10 jobs opportunities / posts on regular basis.</p> <p>Indirect: The weights, measures and CNG sector will provide chances for registration of manufacturers (assemblers) / dealers / repairers leading to skill development and employment opportunities to hundreds of persons in the private sector.</p>									

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