REPUBLIC OF KENYA

COUNTRY: KENYA

PROJECT: KENYA DIGITAL ECONOMY ACCELERATION PROJECT (KDEAP)

IMPLEMENTING AGENCY: Information and Communications Technology Authority (ICTA)

PROJECT ID: P170941; Credit Numbers 7289-KE and 7290-KE

TERMS OF REFERENCE

REQUEST FOR EXPRESSION OF INTEREST

For

Technical Assistance for Preparation of a Commercial Transaction Manual for Digital Infrastructure Deployment

(Consulting Firm)

Contract No: KE-ICTA-407843-CS-CQS

Issue Date: 04th June 2024

Closing Date: 19th June 2024

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Technical Assistance for Preparation of a Commercial Transaction Manual for Digital Infrastructure Deployment (Consulting Firm)

1. **Background**

The Government of the Republic of Kenya (GoK) has received financing in the amount equivalent to US$390 Million equivalent from the World Bank towards the cost of the first phase of the Kenya Digital Economy Acceleration Project and it intends to apply part of the proceeds to payments for goods, works, non-consulting services and consulting services to be procured under this project.

The project will include the following components.

1.1 Component 1: Digital Infrastructure and Services-The aim of this component is to increase access to high-speed internet for individuals, industry, and government—the 'foundation of the foundations' of a digital economy and strengthen Kenya's role as regional digital leader—while leveraging investments from the private sector

1.2 Component 2. Digital Government and Services- This component will invest in the foundational digital services, platforms, architectures, and policies needed to transform the way the Government communicates and conducts its internal operations.

1.3 Component 3. Digital Skills and Markets- This component aims to equip young Kenyans with digital skills and strengthen their abilities to access and compete in domestic and regional markets through supporting skills development, to study mechanisms to improve access to affordable devices and through enhancing the enabling environment for e-commerce to support Kenya's role as a regional digital hub.

1.4 Component 4. Project Management- This component will support project implementation, coordination, for the Project Implementation Unit (PIU) within ICTA and capacity building.

1.5 Component 5: Contingent Emergency Response Components-This component will be activated in the event of an emergency.

The Gok intends to apply a portion of the proceeds of the Credit to cover activities under sub-components 1.1 (Extending the Reach of Backbone Networks).

2. **Objective of the Assignment**

The objective of this assignment is to develop a Commercial Transaction Manual (CTM) which is meant to provide the following:

- A framework expanding key principles for deployment of digital public infrastructure (DPI), including:
    a. an open, competitive bidding;
    b. application of open access principles;

c. ownership and operation of the infrastructure funded by licensed operators;
d. equitable infrastructure sharing; efficient allocation of government funds;
e. observance of social and environmental safeguards;
f. technological neutrality;
g. green, energy-efficient use of resources;
h. and others that may be required;

- Identification of one or more viable and sustainable commercial models for deployment of DPI.
- Suggest procurement models and likely technology preference for each of the priority routes, for urban/rural areas and propose how they may be divided into lots based on this preliminary classification (bearing in mind that technology choice will be an outcome of the competitive procurement process); and
- Develop guidelines to support the government on the competitive bidding process in accordance with World Bank's Procurement Regulations for IPF Borrowers, First Published 2016 and Revised Fifth Edition September 2023 and international best practices. The expectation is that this will involve the use of multi-round reverse auctions conducted over an electronic auction platform (EAP), which is subject to a separate selection process. The CTM consultant will need to work closely with the EAP consultant.

3. Scope of the Consulting Services and Specific Tasks

3.1 Scope of Work

The scope of services involves development of a Commercial Transaction Manual (CTM) that can serve as a guide to the tendering mechanisms and the approach of evaluation in awarding subsequent KDEAP project funds to the network operators to commercially deploy and sustain last-mile infrastructure while also putting in matching investments. The CTM should clearly articulate the most appropriate procurement process, various approaches to be considered on the best practice models for open access networks, potential benefits to the Government, network operators (including incentives) as well as dispute resolution procedures.

3.2 Specific Tasks

The specific tasks will include the following:

a) Propose key telecom sector framework principles:

Under this task, the following are the sub-tasks:

(i) Conduct a **market survey to identify potential investors** in digital infrastructure, specifically for middle mile backbone fiber (sub-component 1.1), last-mile connectivity and internet pre-purchase for education (1.2), last mile connectivity and internet pre-purchase for government offices (1.3); co-ordination with the universal service

fund (1.4) and regional connectivity, including increasing the number of cross-border fiber routes.

(ii) As part of the market survey, the consultant should undertake one-on-one **interviews with likely investors**, including international companies. This will complement the stakeholder consultations to be undertaken under the next task;

(iii) Review existing national and regional **legislation and regulation**s related to competition and procurement, including relevant World Bank procurement procedures;

(iv) Review existing and planned **policy and regulatory instruments** for the telecom sector;

(v) Review the **taxation framework for the telecom sector** as it would apply to digital infrastructure investment, and how this might impact investor appetite;

(vi) Describe international **best practices** on open access and competition policies for the telecom sector (open access, technology neutrality, narrowing the digital divide, etc.), and greening of telecoms investment, and how this might be adopted in Kenya; and

b) Identify an optimal commercial model for the priority routes[1]:

Under this task, the following are the sub-tasks:

(i) **Literature review of prior work**[2] conducted on identification of priority routes, and consultant study on designating routes, as a basis but these routes may be modified during this assignment to take into account new information and developments;

(ii) Facilitate a **series of industry consultations** (at least one) between the Ministry of Information Communication & The Digital Economy (MICDE), ICT Authority, public and private operators to confirm priority routes and discuss optimal commercial models for each. The consultation will be extended also to international operators, including those in neighboring countries, and potential new emerging technologies including but not limited to fixed wireless access, 5G and Low-Earth Orbit (LEO) satellite operators;

[1] Designation of priority routes is subject to a separate consultant study. Final selection will be undertaken by ICTA, Minisytr of Education, Huduma Kenya Secretariat and other relevant agencies.

[2] T a minimum, this would include the TMG study of missing links (available at: https://www.hoainitiative.org/missing-broadband-links-in-the-horn-of-africa-region/), the study of broadband options conducted in Kenya by Salience (2023, available from ICTA), and the ongoing work by CEPA on leveraging private sector investments in digital public infrastructure. The winning bidder will be furnished with the necessary studies.

(iii) Recommend approaches to ensuring a homogenous **national broadband infrastructure (NBI)**; namely, open access and complete with sustainable operations & management and a business plan.

c) Make reference to the separate Technical Feasibility Study consultancy (within the KDEAP's infrastructure focus) which will develop technical specifications for confirmed routes and last mile connectivity (universal access gaps) needs to be included in the tender documents:

Under this task, the following are the sub-tasks:

(i) Develop **viable and sustainable procurement model options**, and propose one for each set of priority route taking into account issues such as demand, nearest fiber node, security concerns etc.;

(ii) Recommend scenarios for **optimal development of market structure** to be considered when developing the commercial model options in particular to avoid market dominance;

(iii) On completion of interim report, facilitate a **second set of industry consultations** to discuss options and further refine commercial and transaction models;

(iv) In the event that a **PPP model** is proposed for certain limited routes where competition and potential private sector investors is limited, advise on pros and cons for the institutional model[3] (incorporated or unincorporated) and design (entities, roles and relationships); possible need for Construction and Maintenance Agreement (C&MA); in line with GoK's PPP regulations.

(v) Identify any **regulatory actions** required for implementation of each commercial model.

(vi) Define draft **Service Level Agreements (SLA)** for relevant for implementation of each model

(vii) Identify any **obligations**[4] to be included as part of the award (i.e., coverage, connectivity to institutions, such as schools, health centers, internally displaced peoples (IDPs)/refugee camps and their host communities;

(viii) Identify need for **provision of assets and safeguards to Government**, for instance by providing dark fiber or long-term supply contracts;

[3] Obligations may include 1) Open access; 2) Deployment of climate-resilient infrastructure; 3) complying with WB environmental and social safeguards; and 4) making available a certain number of fiber strands (dark fiber) to the Government for its exclusive use for the duration of the cable lifetime. The number of fiber strands may be proportional to the Government's contribution of project fuds to individual routes.

[4] GOK will conduct a separate study that will identify universal access and service needs along the priority routes.

(ix) Identify and recommend ways of **incentivizing the private sector** to align to Open Access principles ('build once, used by all' policy); and

(x) Based on the above, prepare an **implementation plan**.

d) Develop guidelines for competitive bidding process in accordance with Procurement Regulations for IPF Borrowers, First Published 2016 and Revised Fifth Edition September 2023 and international best practices.

Under this task, the following are the sub-tasks:

(i) Review national **procurement legislation**, including on PPPs, international best practices and World Bank's Procurement Regulations for IPF Borrowers, First Published 2016 and Revised Fifth Edition September 2023;

(ii) Provide an overview of **comparable tender processes** used in other countries[5] and describe their advantages and disadvantages (multi-round reverse auctions etc.);

(iii) Identify how to build-in **price discovery and appropriate safeguards** to prevent collusive behavior on the part of the bidders;

(iv) Identify how to ensure **equity** and avoid rewarding dominance;

(v) Work with ICT to conduct a **pilot phase to test and further develop the CTM**; and

(vi) Identify how to ensure the approach used in the tendering process is **technology-neutral**.

e) Prepare a Commercial Transaction Manual

Under this task, the following are the sub-tasks:

- Based on scope **(a)** to **(d)** above, develop a **tender strategy and route deployment schedule** based on the recommendation on sequencing coming out of the Industry Consultations and Technical Feasibility Study.
- The tender strategy may include:
    - Develop the **timing** of the bidding processes to be carried out for the tenders, including selection rounds and evaluation criteria;

[5] Consultants could start with reviewing "Allocating universal service subsidies using multi-round reverse auctions: Telecommunications in Tanzania," World Bank (2022) and "Innovative Business Models for Expanding Fiber-Optic Networks and Closing Access Gaps". (World Bank, 2022).

- Design and propose detailed **selection and evaluation processes**;
- Design **due diligence processes** (to be carried out by potential bidders during the prequalification phase); and
- Design how **offers will be ranked** and how confidentiality of bidders will be managed.
- Design **how offers will be evaluated,** including proposing rated criteria.
- Proposed threshold mechanisms for maximum allowable subsidy (MAS), for instance per km on fiber routes or per client on satellite and cellular routes, to ensure value for money is achieved for each bidding process.

- **Prepare draft bidding documents** for an International Competitive Bidding process; this should take into account:
  - Policies and objectives of the Kenyan Government for the ICT sector;
  - Existing sector structure;
  - Existing legal and regulatory framework;
  - Licenses, financial information, human resource situation;
  - Bidding process and selection criteria.
- Guidelines on how to prepare other elements as necessary which may include:
  - Electronic auction platform;
  - virtual online data room information;
  - invitation to tender documents;
  - draft task book;
  - task book;
  - coordination with consultant supplying electronic auction platform and provision of relevant documentation;
  - draft and final share or asset purchase agreements and shareholders agreements;
  - draft service level agreements; and
  - Any other closing transaction documents that may be needed.

4. DURATION AND LOCATION OF THE ASSIGNMENT

The duration of the assignment shall be **three (3) calendar Months** from contract commencement date. The location of the assignment will be in Republic of Kenya.

5. REPORTING REQUIREMENTS AND TIMELINES FOR EXPECTED DELIVERABLES

The consultant shall submit the reports as detailed in the table below.

Table 1: Reporting requirements and timelines for deliverables/outputs

Report	Details	Timeline for submission of deliverable from date of contract commencement	Number and format of reports presentation
Inception Report	The consultancy firm will share an inception report with detailed workplan, approach of executing the project, milestones (based on the provided tasks and sub-tasks), staffing and projection execution arrangements (including risks and risk mitigation plan). The inception report should cover the anticipated models, principles, tender strategies, data as well as the list of assumptions.	Two weeks	4 hard copies and 1 digital copy
Open Access Networks Report	The report for Key principles for Open Access Networks and Competitive bidding should contain: a. Findings of the market survey with potential investment models (and investors) on shared digital infrastructure. b. A summary of the relevant legislation, policy, taxation and international best practices and key telcom principles for open access networks and competition.	Six weeks	4 hard copies and 1 digital copy
Optimal Commercial Model Report for priority routes	The report on the optimal commercial model for priority routes shall contain:	8 weeks	4 hard copies and 1 digital copy

Report	Details	Timeline for submission of deliverable from date of contract commencement	Number and format of reports presentation
	a. Supplementary considerations for identification of priority routes. b. Recommendations on the approaches to consider in ensuring a homogenous national broadband infrastructure (NBI); namely, open access and complete with sustainable operations & management as well as a business plan; c. Options for the commercial models for the priority routes based on demand, nearest fiber node, security etc. as well as recommended scenarios for optimal development of market structure, SLAs and PPP considerations.		
The Interim CTM Report (for Pilot Deployments)	The Interim CTM (for pilot deployment) should include: • The model of identification of sites. • Estimation of maximum allowable subsidy for each site/route through the application of the developed financial model to calculate the Maximum Allowable Subsidy (MAS) for each selected route. • Development of the pilot phase budget for the auctioning and CTM model • Design of the application forms and pre-qualification. Interested parties can be invited to submit bid applications in response to a call for	10 weeks	4 hard copies and 1 digital copy

Report	Details	Timeline for submission of deliverable from date of contract commencement	Number and format of reports presentation
	expressions of interest (EOI) • Identification of the Qualified bidders. • Training on CTM • Testing of the Electronic auction platform. • Auction system user education to undertake bidder information sessions, mock auctions, and engage in bidder and stakeholder education • Auction process and timelines. • Auction results and public announcement. Impact evaluation of the pilot and draw lesson for future policy. A Pilot phase report should be presented to relevant stakeholders and all key learnings adopted as part of the final CTM document/manual		
The Final CTM Document	The CTM should include: a. The overarching long-term considerations developed in the Interim CTM document and the key lessons from the pilots. b. The key principles and guidelines for competitive bidding process (based on national legislation, the commercial models, international best practices and world bank procurement guidelines). c. The tendering strategy and guidelines for the bidding documents. d. Stakeholder engagement guidelines (on "Gap Financing").	12 Weeks	4 hard copies and 1 digital copy

The specified copies (2 original copy, 2 hard copies and 1 digital copy) of each of the listed reports shall be sent to the client at the following address:

The Chief Executive Officer,
ICT Authority
Telposta Towers 12th Floor, Kenyatta Ave
PO Box 27150 - 00100 Nairobi Kenya
Tel: +254 20 2089061/ 2211960 Fax: +254 20 2211960
Email: procurement@ict.go.ke , info@icta.go.ke
Website: www.icta.go.ke

Attention:
The Project Coordinator
KDEAP

Upon submission of every report, the consultant is expected to make a presentation of the submitted report to the Client in a scheduled meeting. The acceptance of the report shall be recorded in the minutes of the meeting.

6. PAYMENT SCHEDULE

The proposed payment schedules based on satisfactory performance of the contract which will be negotiated with the successful consultant will be as presented in Table 2 below.

Table 2: Proposed payment schedule

S/No	Report	Time from date of contract signature	Percentage of payment (for Phase 1)
1	Inception Report	2 weeks	10%
2	Open Access Networks Report	6 Weeks	10%
3	Optimal Commercial Model Report (for priority routes)	8 weeks	20%
4	The Interim CTM Report (for Pilot Deployments)	10 weeks	20%
5	The Final CTM Document	12 weeks	40%

7. MINIMUM REQUIREMENTS FOR CONSULTANT'S QUALIFICATIONS AND EXPERIENCE

The consulting firm will be required to have a multi-disciplinary team including legal, policy and regulatory experts and economists, with deep experience in the Kenyan legal, institutional and regulatory ecosystem.

The minimum requirements for the Consultant's qualifications and experience is as follows:

(i) **Core business and years in Business:** The firm should be registered/incorporated as an entity in the field of telecommunications market research and consultancy or equivalent for a minimum of fifteen (15) years.

(ii) **Relevant Experience:** The firm shall demonstrate as having successfully executed and completed at least three (3) assignments of similar nature, complexity and in a similar operating environment in the last ten (10) years. Details of similar assignments, with name and address of the client, scope, value, and period should be provided and submitted.

(iii) Technical and Managerial capability of the firm: The firm shall demonstrate as having the requisite technical and managerial capacity to undertake the assignment.

8. TEAM COMPOSITION AND MINIMUM QUALIFICATION AND EXPERIENCE REQUIREMENTS FOR THE KEY EXPERTS

The Consultants shall be well qualified and experienced professionals as required and appropriate for completion of the exercise. They should possess necessary resources to undertake services of such nature including equipment and software required to execute the assignment. The key professionals/expert shall personally carry out (with assistance of other non-key experts and staff deemed appropriate) the services as described in this TOR. The key experts to be provided by the Consultants for this assignment are as follows: -

follows: -

a) Team Leader

i. At least a Master's degree in telecommunications/economics/ business administration or a related discipline from a recognized university.

ii. A minimum fifteen (15) years' experience in the field of telecommunications market development in developing/emerging economies with a history of successful network development and commercial operation in the public and private sector in an African setting;

iii. A minimum of specific Experience in Project Management with having successfully led at least 3 large projects of a similar nature in the last six (6) years.

b) ICT Technical Specialist

i. At least a Master's degree in Telecommunications/Electrical/Electronics Engineering or Computer Science/ICT/IT.

ii. Minimum ten (10) years of general experience in developing broadband commercial models, broadband product development and monetization.
iii. Minimum seven (7) years' specific experience in at least 3 successfully completed assignments that involve providing technical advisory services on telecom networks development and commercialization of telecom services.

c) Policy/Legal Adviser

i. A minimum of Bachelors Law degree with a bias to Economics and public-private partnerships from a university recognized in Kenya.
ii. A minimum of general experience of 5 years in Policy and legal advisory services
iii. At least 3 Years specific experience consultancy services in Telecoms environment

d) Digital Economy Specialist

i. At least a bachelors' degree in Economics/Commerce or related degree from a recognised university.
ii. At least eight (8) years of general experience providing advisory/consultancy services in Telecoms, Digital Access and Infrastructure Research Projects.
iii. At least 3 years specific experience in developing cost models/ Gap financing models.

9. ESTIMATED TIME INPUTS FOR KEY EXPERTS

The number of key experts and the estimated time input for each key expert for the assignment are presented in Table 4.

Table 4: Estimated Time Inputs for Key Experts

S/No	Key and support Staff	No	Estimated Time Input (staff-Weeks)
1)	Team Leader	1	12
2)	ICT Technical Specialist	2	24
3)	Policy/Legal Advisor	1	8
4)	Digital Economy Specialist	2	16
Total		**6**	**60**

10. OBLIGATION OF THE CLIENT

The responsibilities of the Client (ICT Authority) shall include:

- Provision of all relevant information and study reports done on the state of GoK's backbone and middle mile infrastructure, and other relevant studies.

ICTA shall also provide guidance and clarification on routes for which the CTM will be applicable.

- Facilitate to the best of its ability the consultants' access to key officials within the relevant Ministries and other relevant official entities, including operators, regulators and/or any others as applicable.
- Ensure cooperation from GoK stakeholders, whose activities and programs may be considered relevant to this project, to enable the consultants to have access to the information necessary to carry out their work program.

11. Responsibilities of the Consultant

The consultant's key responsibilities include (but not limited to) the below:

- Carry out the identified tasks above in a result-oriented manner with the sole objective of achieving outputs and outcomes expected from the assignment.
- Conduct monthly feedback sessions with the client and relevant stakeholders in order to inform the team on progress made and to identify and address any challenges that the consultant teams may encounter in the course of their assignment.
- Costs associated with any pre-planning activities on this project by the consultant such as attending consultancy contract negotiation meetings.
- Knowledge transfer and capacity building for the CTM adoption across the client operations.

Annex 1: Context

- In the quest to close the broadband connectivity divide, KDEAP seeks to explore procurement models that allocate public funds, from the project, to leverage "**matching investments**" from the private sector, to achieve planned deployment of additional fiber in the backbone, last-mile and regional networks, and achieve sustainability for operations and maintenance of the network.
- Project funds may be allocated using a "**reverse auction**", whereby the first offering the highest matching investment (and correspondingly requiring the lowest level of subsidy) will win the award. The CTM consultant will be expected to carry out a market analysis of the likely bidders, and to assess the level of interest. Where there are sufficient bidders (e.g., three or more) a multi-round reverse auction may be used, but if there is only one or two bidders, then a single round reverse auction may be used.
- These models may be complemented by **bulk purchase of internet** under long-term supply agreements. This is typically referred to as a an anchor tenant model, whereby government demand can be be used to stimulate private sector investment as a purchaser of a guaranteed minimum of bandwidth. The matching investments and bulk purchase model, which are described in more detail in the annexes, can, of course, be combined in procurement or kept separate.
- These various models are generically termed **"gap financing"** in that they aim to close the gap between the needs of rural areas and the commitment that network operators are willing to make for financing what might otherwise be an uncommercial investment and would also aim to allocate operation and maintenance responsibility and risk to the network operators. A range of possible approaches may be piloted to suit local market and regulatory circumstances.
- The aim of the procurement model is to promote **private capital mobilization** (PCM) through incentivizing investment by ISPs and network operators to invest their own funds alongside project funds. For the KDEAP project as a whole, a target of US$100m for PCM has been set, with the majority of this under sub-component 1.1 (idle mile backbone investment)
- The details of the preferred bidding process, including variations to be tested, and the potential benefits to public and private sector can be comprehensively described through a **Commercial Transaction Manual (CTM),** to be drafted by the consultant. This may be revised at different stages of project implementation, for instance, at the end of the pilot round of investments, and ahead of the second phase of KDEAP implementation. The CTM is meant to guide the award of subsequent KDEAP project funds against the desired matching investments from the ISPs and network operators post the deployment of the pilot networks that would be carried out in the initial 15-months of the KDEAP project.
- Detailed descriptions are as per Annex 2 and 3 of this document.

Annex 2: Matching Investments (description extracted from KDEAP PAD)

In component 1 of the KDEAP project we are proposing to explore models that use public funds, from the project, to leverage matching investments from the private sector, to achieve planned deployment of additional fiber in the backbone, last-mile and regional networks, and achieve sustainability for operations and maintenance of the network. These various models are generically termed "gap financing" in that they aim to close the gap between the needs of rural areas and the commitment that network operators are willing to make for financing what might otherwise be an uncommercial investment and would also aim to allocate operation and maintenance responsibility and risk to the network operators. A range of possible approaches may be piloted to suit local market and regulatory circumstances. Without funds from the project, and the associated guarantee of anchor public sector customers (schools, hospitals etc.) it is unlikely the network operators would take the risk to invest alone, but private sector capital should be leveraged as much as possible to minimize the amount of public funding needed.

- The process would start with an assessment study to designate routes in underserved areas that are deemed to be non-commercial (i.e., in need of subsidy to be viable). Preliminary studies have already been carried out in the preparatory phase of this project by ICTA (for NOFBI refurbishment and extension) and by the World Bank (for the overall backbone), and digital maps developed. But these studies will need to be supplemented by more detailed local studies.
- A set of models will be identified and, as needed, piloted in the first year of project implementation to determine which funds allocation methodologies, and operational and ownership models, work best, both for the Government and the network operators. While details will be worked out and may vary based on final approach, the proposed methodology would be to launch competitive tendering process in which operators bid for the lowest level of public investment they would require, and the matching investment they are willing to make, for a particular route (each route would be one lot in the pilots and subsequent procurement). The lowest bid for each lot wins (i.e., a reverse auction model) and the auction would be run in a series of rounds, with price transparency, ideally on an electronic auction platform to optimize the benefits of competitive bidding*. The process will be phased in a series of rounds. Some bids may request no subsidy in which case they would be fully owned by the operator.
- Details of the preferred bidding process, including variations to be tested and the potential benefits to network operators, will be described in more detail in the CTM. Adoption of the CTM would then release funds for the main bulk of the financing for Component 1 (and for Phase 2).
- It is proposed that the model be developed and used beyond the project funds: Some of the routes would be allocated to the USF (for instance, last mile connectivity to healthcare centers and judiciary) and others to project funds, and still others to development partners (the European Union, for instance, is planning to cover last-mile connectivity for TVETs).
- Those routes that benefit from a contribution from project funds would follow World Bank procurement guidelines in the bidding process and those that benefit from a subsidy from project funds would be subject to certain conditions. These would include (i) the use of open access principles (to allow other operators to use the fiber at a reasonable rate); (ii) adherence to climate-resilient standards; (iii) the application of environment and social standards during construction; and (iv) the allocation of a certain number of fiber strands on the cable for the exclusive use of the Government, and the rest to one or more network operators, for the lifetime of the fiber (i.e. dark fiber). The percentage

to be allocated to each party would be proportionate to the relative levels of investment by the Government and the network operator. The use of dark fiber by the Government will assist with the provision of pre-paid internet capacity under sub-components 1.2 and 1.3. The use of the remaining capacity by the network operators will allow them to serve all other potential customers in the area (i.e. build once, use by many principle).

- The bidding process would be technologically-neutral allowing for bidders to propose alternative technologies to fiber in the last mile that meet a minimum required level of functionality (e.g., fixed wireless access, 5G cellular or LEO satellites).
- Service level agreements (SLAs) would be signed between the Government and the winning bidders.

Note: * The model is described in more detail in World Bank/CEPA. 2023. *Allocating Universal Service Subsidies Using Multi-Round Auctions*.

Annex 3: Bulk Purchase of Internet Capacity (extracted from KDEAP PAD)

In subcomponents 1.2 and 1.3 of KDEAP, we propose to use project funds for the pre-purchase of internet capacity, on demand, for key sectors of the economy (Government and the Education Sector in Phase 1 and the Healthcare sector and Judiciary in Phase 2). The aim is to subsidize (or even eliminate) the monthly charges for using the internet for end users in the selected target groups. The philosophy here is that internet use becomes transformational only once the user no longer needs to worry about meeting the costs of monthly payments.

- As with matching investments for middle mile connectivity (Annex 1) the process would start with an assessment study of the current and projected future bandwidth needs of the selected target groups, and the locations to be served. This has already been done for the education, healthcare and judiciary sectors in the feasibility study, but more detailed studies may be required to assess the needs for County and Government MCDA.
- Once the bandwidth needs are assessed, a competitive tender would be opened to invite bidders (primarily ISPs) to supply a certain minimum level of bandwidth to a set of defined locations (e.g., schools within a county) over a minimum period (say 5-10 years) under an indefeasible rights of use (IRU) contract. On fiber links where there are already fiber strands dedicated for Government use (see Box 2) these would be used to maximum advantage. Experience from elsewhere (e.g., Digital Tanzania Project; P160766) has suggested the best approach may be to fix the price of the contract in advance, according to the available budget, and let bidders compete on speed, duration of contract and service delivery technology so that the price per Mbit/s per month delivered can be minimized.
- As the length of the supply contract may exceed the duration of the project, bidders are invited to include all annual operations and maintenance fees into the upfront bid amount, which may be paid in two tranches – on service activation and after the first year of service. This would be specified in SLAs with the winning bidders.

The main advantage of this approach is that it offers long-term sustainability. By aggregating demand, for instance for all schools in a particular county, and by using a competitive tendering mechanism, the Government is able to get best value for money. As with matching investments, the tender process can be technology neutral because it is the service that is being purchased (bandwidth) not the delivery mechanism. For some rural districts, the tendering process may combine both mechanisms (matching investments and internet pre-purchase) in one tender which would also include any required support also for energy provision, using solar power. In the case of combined tenders, the models defined in the CTM would be followed.