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23/11/23



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23/11/23

REPUBLIC OF KENYA
THE NATIONAL ASSEMBLY

THIRTEENTH PARLIAMENT SECOND SESSION - 2023

PUBLIC PETITIONS COMMITTEE

THE NATIONAL ASSEMBLY
PAPER STAMP

DATE: 23 NOV 2023

DAY:
THURS

TABLED
BY:

HON. NIMROD MBAL MP
CHAIRPERSON, PUBLIC PETITIONS

CLERK-AT
THE-TABLE:

A. Shibusko

REPORT ON:

CONSIDERATION OF A PUBLIC PETITION NO. 05 OF 2023 REGARDING WARD-
BASED SOLUTION AS A LONG-TERM REMEDY TO PERENNIAL WATER
SHORTAGE IN KENYA BY ENG. VICTOR OKUNA

NOVEMBER 2023

Clerk's Chambers
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NAIROBI

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LIST OF ACRONYMS

AWWDA	-	Athi Water Works Development Agency
CIDPs	-	County Integrated Development Plans
CoG	-	Council of Governors
EPZA	-	Export Processing Zones Authority
NAWASIP	-	National Water and Sanitation Investment and Financing Plan
NWHSA	-	National Water Harvesting and Storage Authority
PPP	-	Public Private Partnership
SDGs	-	Sustainable Development Goals
WASREB	-	Water Services Regulatory Authority
WRA	-	Water Resources Authority
WRUA	-	Water Resources Users Association
WSTF	-	Water Sector Trust Fund



CHAIRPERSON'S FOREWORD

On behalf of the Public Petitions Committee and pursuant to the provisions of Standing Order 227, it is my pleasant privilege and honour to present to this House the Report of the Committee on the public petition regarding ward-based solution as a long-term remedy to perennial water shortage in Kenya by Eng. Victor Okuna. The petition was conveyed to the House under Standing Order No. 225 (2) (b) by the Speaker of the National Assembly.

The Petitioner prayed that the House recommends to the national government to drill, equip and solarize boreholes in each of the 1450 wards across the country except for eighty-five wards in Nairobi and major towns. The Petitioner further prayed that the House considers amending the Water Act, 2016 to provide for ward-based water supply regulations.

In considering the Petition, the Committee made various key observations taking into consideration submissions from the various stakeholders including the Petitioner, Council of Governors, Ministry of Water, Sanitation and Irrigation, Water Resources Authority, and Athi Water Works Development Authority. In response to the prayers sought by the Petitioner, the Committee rejected the prayers sought by the Petitioner.

On the prayer to cause the national government to drill, equip and solarize boreholes in each of the 1450 wards across the country except for eighty-five wards in Nairobi and major towns, the committee recommended that the idea of ward-based supply of water be considered in the (NAWASIP) National Water and Sanitation Investment and Financing Plan between National Government and County Governments and the shared roles are already provided for in the Fourth Schedule of the Constitution of Kenya 2010. Further, on the prayer to amend the Water Act, of 2016 to provide for ward-based water supply regulations, the Committee observed that the same is already provided for under section 56 of the Water Act of 2016. However, the petitioner could submit his proposal to be considered in the review of the Act, to allow for comprehensive engagement that will provide a water solution that meets the needs and priorities of all counties.

The Committee appreciates the Offices of the Speaker and Clerk of the National Assembly for providing guidance and necessary technical support without which its work would not have been possible. The Chairperson expresses gratitude to the Committee Members for their devotion and commitment to duty during the consideration of the Petition.

On behalf of the Committee and pursuant to the provisions of Standing Order 199, I now wish to lay the Report on the Table of the House.



HON. NIMROD MBITHUKA MBAI, M.P.
CHAIRPERSON, PUBLIC PETITIONS COMMITTEE

Date.....23-11-2023.....



PART ONE

1. PREFACE

1.1 Establishment and Mandate of the Committee

The Public Petitions Committee is established pursuant to the provisions of Standing Order 208A and is mandated to:

- a) consider all public petitions tabled in the House;
- b) make such recommendations as may be appropriate with respect to the prayers sought in the petitions;
- c) recommend whether the findings arising from consideration of a petition should be debated; and
- d) advise the House and report on all public petitions committed to it.



1.2 Committee Membership

The Public Petitions Committee was constituted in October 2022 and comprises of the following Members:

Chairperson

Hon. Nimrod Mbithuka Mbai, M.P.
Kitui East Constituency

United Democratic Alliance (UDA)

Vice Chairperson

Hon. Janet Jepkemboi Sitienei, M.P.
Turbo Constituency

United Democratic Alliance (UDA)

Hon. Patrick Makau King'ola, M.P.
Mavoko Constituency

**Wiper Democratic Movement-Kenya
(WDM-K)**

Hon. Edith Vethi Nyenze, M.P.
Kitui West Constituency

**Wiper Democratic Movement-Kenya
(WDM-K)**

Hon. Ernest Kivai Ogesi Kagesi, M.P.
Vihiga Constituency

Amani National Congress (ANC)

Hon. Maisori Marwa Kitayama, M.P.
Kuria East Constituency

United Democratic Alliance (UDA)

Hon. Joshua Chepyegon Kandie, M.P.
Baringo Central Constituency

United Democratic Alliance (UDA)

Hon. John Walter Owino, M.P.
Awendo Constituency

Orange Democratic Movement (ODM)

Hon. Bernard Muriuki Nebart, M.P.
Mbeere North Constituency

Independent

Hon. Bidu Mohamed Tubi, M.P.
Isiolo South

Jubilee Party (JP)

Hon. Caleb Mutiso Mule, M.P.
Machakos Town Constituency

Maendeleo Chap Party (MCCP)

Hon. John Bwire Okano, M.P.
Taveta Constituency

**Wiper Democratic Movement-Kenya
(WDM-K)**

Hon. Peter Mbogho Shake, M.P.
Mwatate Constituency

Jubilee Party (JP)

Hon. Sloya Clement Logova, M.P.
Sabatia Constituency

United Democratic Alliance (UDA)

Hon. Suzanne Ndunge Kiamba, M.P.
Makueni Constituency

**Wiper Democratic Movement-Kenya
(WDM-K)**



1.3 Committee Secretariat

The Public Petitions Committee is facilitated by the following secretariat:

Lead Clerk
Mr. Samuel Kalama
Principal Clerk Assistant

Ms. Anne Shibuko
First Clerk Assistant

Ms. Miriam Modo
First Clerk Assistant

Mr. Willis Obiero
Clerk Assistant III

Mr. Shadrach Omondi
Legal Counsel II

Ms. Patricia Gichane
Legal Counsel II

Mr. Martin Sigei
Research Officer III

Mr. Andrew Shangirai
Principal Sergeant at Arms

Mr. Yezel Jilo
Sergeant at Arms

Ms. Lilian Mburugu
Media Officer

Ms. Rahab Chepkilim
Audio Officer



PART TWO

2. PUBLIC PETITION NO. 05 OF 2023 REGARDING WATER-BASED SOLUTION AS A LONG-TERM REMEDY TO PERENNIAL WATER SHORTAGE IN THE COUNTRY

2.1 INTRODUCTION

1. Public Petition No. 05 of 2023 regarding Water-Based Solution as a long-term remedy to perennial water shortage in Kenya by Eng. Victor Okuna of Post Office Box 828, Migori, was conveyed to the House by the Honourable Speaker on Wednesday, 22nd February, 2023.
2. The Petitioner, drew the attention of the House to the need for the adoption of a long-term solution to water shortage, through the drilling, solarizing and equipping boreholes in each Ward across the country, except for eighty-five Wards in Nairobi City County and major towns because of their water and sewerage systems.
3. The Petitioner further claims that Kenyans do not have access to clean safe water in adequate quantities as provided for in the Constitution.
4. He also avers that the cost of water would increase if the initiative is left in the hands of public-private partnerships.
5. He affirms that this long-term solution will mitigate the effects of climate change, create job opportunities for the youth and provide for the equitable sharing of national resources.

2.2 PETITIONER'S PRAYERS

The Petitioner prays that the National Assembly through the Public Petitions Committee -

6. Recommends to the national government to drill, equip and solarize boreholes in each of the 1450 wards across the country except for eighty-five wards in Nairobi and major towns;
7. Amends the Water Act, 2016 to provide forward-based water supply regulations; and
8. Makes any other appropriate recommendations it deems fit.



PART THREE

3. STAKEHOLDERS' SUBMISSIONS ON THE PETITION

3.1 The Petitioner

Eng. Victor Okuna appeared before the Committee on Tuesday, 18th April, 2023 and submitted as follows -

9. That, many Kenyans do not have access to clean and safe water; contrary to Article 43 Clause 1(a) of the Constitution, on economic and social rights which gives every citizen a right to clean and safe water in adequate quantities;
10. That, despite being a devolved function, the county government has not created infrastructure to enable access to water to be decentralised to the village level;
11. That, funds for development expenditure allocated to county governments are insufficient for the development of water-related infrastructure;
12. That, the Water Act, of 2016 gave regulations on the management and usage of water resources but did not indicate how and when this clean and safe water in adequate quantities will be supplied to the Kenyans;
13. That, the current situation experienced in the country, is as a result of poor policies and inadequate laws that were put forward by previous governments on mitigating droughts in the country;
14. That, 95% of water pans constructed by county and national governments dried long before the drought because of the seasonal rivers;
15. That, lack of clean and safe water has made thousands of school-going children skip schools contrary to Article 52 (1) (a) of the Constitution which gives every child a right to free and compulsory basic education;
16. That, there is an urgent need for the national government to come up with long-term solutions to water shortage affecting millions of Kenyans;
17. That, Kenyans have lost thousands of their animals due to lack of water during severe droughts, causing the national government and private organizations to provide relief food to the affected people while ignoring the animals which are a source of livelihood to millions of Kenyans;
18. That, with the experience from the high cost of electricity bills as a result of private-public partnerships being embraced in the country, the cost of water to poor Kenyans may triple if the water sector is left to run on public-private partnership arrangement or model;

19. That, the Water Act, 2016 to be amended by inserting “**Ward-Based Water Supply Regulation**” between “**Ground Water and Entry on land**” in Part III of the Water Act 2016, and should clearly state how this will be achieved, the department that will execute it as well as the timeline for execution;
20. That, a sum of Kshs. 16.2 billion be allocated annually to the Water Fund for realization of its full implementation; and
21. That, the national government drills, equips and solarizes at least two (2) boreholes per Ward per year in each of the 1450 Wards excluding the 85 wards in Nairobi City County and in major towns which have water and sewerage lines.

3.2 Submissions by the Cabinet Secretary for Water, Sanitation and Irrigation

The Cabinet Secretary for Water, Sanitation and Irrigation appeared before the Committee on Thursday, 6th July 2023 and submitted as follows;

That;

22. The domestic water access was at 71% across the country while sanitation coverage was at 32% in the urban and 22% in rural areas. However, some areas faced the challenge of climate change leading to a lack of natural water sources. The proposal by the Petitioner was a little bit complicated as the reticulation of water from storage sources was the responsibility of the county governments. Further, many areas did not have systems in place such as piping.
23. The Ministry has undertaken various programs and projects in partnership with different stakeholders to ensure every citizen has access to safe water. The Ministry often conducted detailed feasibility studies of a project to determine water source availability, economic feasibility and use of appropriate technology. The need analysis undertaken is based on the area to be served and the population expected to benefit. The solutions adopted must address the problem for the particular locality. The ministry concurred with the Petitioner that in some cases groundwater offered a solution to water challenges.
24. That the Ministry was undertaking measures to ensure groundwater development projects including -
 - a) *Water for schools*: The National Water Harvesting and Groundwater Exploitation Program and Water for Schools Program targeted the provision of water in schools and surrounding communities countrywide. In the last two years, the project has enabled the drilling of 81 boreholes for small irrigation schemes and servicing about 35,000 people.
 - b) *Kenya Groundwater Mapping Program*: The Ministry had signed a memorandum of understanding with the Kenya National Groundwater Mapping Program to cover the entire country. The program was being implemented in phases in conjunction with county governments, state corporations, development partners and academia among other stakeholders. Currently, the project has covered Southern Turkana and Marsabit County and is in the process of undertaking groundwater mapping of the Athi and Tana River Basins.

- c) *The Horn of Africa Groundwater for Resilience Project*: The project seeks interventions in aquifer systems within regional and transboundary implications in ASAL areas. The project targeted the rehabilitation of 400 rural water schemes and drilling boreholes where necessary. Further, it sought to develop the stakeholder's capacity and strengthening of enabling environment for sustainable management, access and use of groundwater.
 - d) *Integrated Water Resources Assessment in Nairobi Metropolis for Sustainable Use and Management of Groundwater Resources*: The project targeted integration of water resources assessment within Nairobi Metropolis and to establish the impacts of development within the area on groundwater and surface water resources.
 - e) Other programs include borehole drilling by county governments, the National Water Harvesting and Storage Authority (NWHSA), Water Works Development Agencies and Development Partners.
25. She also emphasized that county governments need to pull up efforts in water provision through the mobilization of funds, awareness creation and collaboration with community projects to reticulate water from the available sources despite the maintenance and sustainability.
26. In her conclusion, she reiterated that the development of water resources and storage of water was squarely within the mandate of the Ministry. However, the Ministry could not achieve the proposals in the Petition without the participation of county governments.

3.3 Submissions by the Council of Governors

The Chief Executive Officer of the Council of Governors vide a Letter **Ref: COG/6/57 Vol.12 (141)** dated **22nd June 2023**, forwarded written submissions, and stated as follows;

That;

27. The Constitution of Kenya provides that every person has the right to clean and safe water in adequate quantities and reasonable standards of sanitation. Further, section 10 to 11 of Part 2 of the Fourth Schedule to the Constitution assigns the County Government the role of implementing specific National Government Policies on Natural Resources and Environmental Conservation, including soil and water conservation as well as County Public Works and Services such as stormwater management systems in built-up areas and water and sanitation services.
28. Over the last 10 years, county governments through the County Integrated Development Plans have worked to achieve SDG Goal 6 and the Kenya Vision 2030 of achieving "*Universal and equitable access to safe and affordable drinking water for all.*"
29. According to the 2022 Annual State of Devolution by the Council of Governors, the following was recorded in the bid to realize the above: -
- i.) 34 Counties have either a Water Act or Policy or both while the remaining 13 Counties are at different stages of developing the policy instruments.

- ii.) 24 counties have developed water matters plans that outline the strategies, goals, and policies related to water resources management in the county.
 - iii.) All the county governments own and finance water and sanitation assets and have established Water Services Providers which provide water and sanitation services to agents of the County Governments.
 - iv.) County governments have undertaken significant infrastructure development projects to enhance water access within their jurisdictions. These projects include the construction, maintenance, and repair of water supply facilities for instance the construction of underground tanks, rock catchments for water harvesting, installation of metered community water points and the protection of water springs and boreholes.
 - v.) Many parts of Kenya especially the rural population rely on groundwater from communal boreholes and county governments have explored this potential with a total of 11163 boreholes dug in various counties for instance in Turkana, Nairobi and Siaya with over 1000 boreholes.
 - vi.) Counties have constructed and operationalized a total of 3184 water pans and 1661 small dams which have seen a decrease in the distance trekked to access water.
30. The recently launched National Water Sanitation and Investment and Financing Plan provides a shared intergovernmental strategy for expanding access to water and sanitation.
31. Devolution's primary goal was to deliver proximate and accessible services in Kenya and county governments are evolving and becoming responsive and accountable for delivering their assigned duties,
32. Implementing water-based solutions allows for a targeted and context-specific response to water scarcity with the following opportunities and challenges: -
- i.) The financing framework may not be aligned with the fiscal capacity and plans of each of the County Governments. The allocation of funds for such initiatives is informed by the unique needs and financial capacities of each county;
 - ii.) Each county is distinct and possesses unique characteristics in terms of population, geographical features, ease of access to water, degree of urbanization and availability of resources. As a result, the County Governments tailor their initiatives based on the specific needs and priorities of the communities they serve. In some cases, County Governments address water scarcity challenges by setting up infrastructure such as boreholes, water pans or small dams that can serve multiple tasks. This approach takes into account the population size and distribution across different areas ensuring efficient utilization of resources;
 - iii.) One of the greatest challenges communities experience, is the collapse of rural water supply schemes especially boreholes. County Governments can employ ward-based approaches as an opportunity for community involvement and co-ownership of water

projects to enhance the success of water supply initiatives in recognition that county governments need to ensure that citizens' participation in planning, budgeting and project sustainability activities is upheld.

- iv.) Provision of water requires significant energy input, and the associated costs pose a challenge to County Governments. Solar energy represents a viable alternative for powering water infrastructure. Several County Governments have increased investments in solar energy projects with most of the boreholes found in counties powered through solar pumping systems.
- 33. The Ministry of Water, the County Governments and the Council of Governors have embarked on the review of the Water Act of 2016 to ensure that the legislation aligns with the provisions and principles outlined in the Constitution including the assignment of functions between the two levels of government. This will prevent duplication of efforts and ensure efficiency and effectiveness in the utilization of resources in the water sector.
- 34. In conclusion, rapid population growth and the impacts of climate change have significantly affected water service provision, particularly in rural areas. These factors have increased the demand for water resources while simultaneously affecting the availability and quality of water sources.
- 35. Lastly, the ward-based solution is a noble idea that can contribute to addressing the gaps in access to water which can be integrated into the National Water and Sanitation Investment Plan and the respective County Integrated Development Plans using a Public-Private Partnership Model.

3.4 Submissions by the Water Resources Authority (WRA)

The Chief Executive Officer of the Water Resources Authority vide a **Letter Ref: WRA/8/36/39** dated **23rd June 2023**, forwarded written submissions, and stated as follows -

- 36. Agents responsible for regulating water and sewerage services in the country is the Water Services Regulatory Board (WASREB).
- 37. The Water Act of 2016 establishes the Water Resources Authority as an agent of the National Government with the mandate of regulating the management and use of water resources (development, augmentation, conservation, or protection of a water resource).
- 38. The promulgation of the new Constitution of Kenya 2010 marked the beginning of a policy review for the water sector which was intended to fully align the policy and legal priorities of the water sector in terms of the mandates of the national government and the 47 county governments.
- 39. The water was divided into three (3) main sub-sectors namely, water resources management, water harvesting and storage and water services therefore, the presentation by WRA would major on the role the authority plays in the protection and conservation of catchment areas and how this facilitates the realization of the right to clean and safe water as contemplated under Article 43(1)(d) of the Constitution of Kenya, 2010.

40. Following the enactment of the now-repealed Water Act, of 2002, water resources management including catchment protection and conservation, was undertaken based on the river basin with the relevant stakeholders.
41. The Act introduced a community-based association for the collaborative management of water resources known as Water Resources Users Association (WRUAs) which are voluntary based and used in conflict management arising from water.
42. Water Catchment areas act like storage facilities where during the rains, the vegetation cover allows the water ample time to percolate deep down and move as sub-surface flow to recharge the rivers, springs, and groundwater storage in both shallow and deep aquifers. This sub-surface flow is slow resulting in rivers from a well-maintained catchment having higher base flows even during the dry season as well as good water yield from boreholes in the vicinity.
43. A reliable supply of clean and safe drinking water is essential for public welfare. Water quality regulation ensures that water treatments and distribution systems have access to good quality water that mitigates treatment costs and meets stringent standards. Regular monitoring and enforcement of regulations guarantee that water is free from contamination that could otherwise compromise public health.
44. The catchment function is a management function shared between the National and County Governments as provided for in the Constitution.
45. The function of protection of the environment and natural resources particularly water protection and securing sufficient residual water in the National Government.
46. Part II of the Fourth Schedule vests implementation of specific National Government policies on Natural resources and environmental conservation that include soil and water conservation and Forestry in the County Governments.
47. Additionally, because of its nature, environmental management and protection in general and catchment protection and management in particular falls within the mandate of various institutions.
48. Article 62(3) of the Constitution vests these categories of public land in the National Government in trust for the people of Kenya – all rivers, lakes and other water bodies, the territorial sea among others.
49. Therefore, to ensure the gains made so far are improved, the Authority recommend that the Authority be supported by other relevant water bodies such as EPZA and respective county governments to comply with guidelines and standards put in place for sustainable utilization of both surface and groundwater.
50. Need to facilitate County Governments in the performance of their function of waste management and disposal to protect water resources not just within the Athi Basin but also across the country.
51. Government Agencies to intervene where court action is required but not possible, due to the government directive for out-of-court amicable resolutions.

3.5 Submissions by the Athi Water Works Development Agency (AWWDA)

The Ag. CEO of Athi Water Works Development Agency, Eng. Joseph Kamau vide a letter **Ref: AWWDA/ADM/GEN/1/VOL.IV(PE-kdr)** dated **30th October, 2023** submitted a report detailing the average cost breakdown for undertaking drilling, equipping, solarizing of boreholes and construction of elevated tanks which was estimated at Kshs. 10.68 million inclusive of supervision costs.

52. That, the cost of drilling one borehole is estimated at Kshs. 1,914,000 as indicated in Table 1 below -

BILL NO. 1: DRILLING OF BOREHOLES					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
201	Drilling of 200mm (8") diameter borehole from 0 - n.e 100m below surface.	M	100	2,800.00	280,000.00
202	Ditto but 100 - n.e 200m depth	M	100	2,400.00	240,000.00
203	Ditto but 200 - n.e 300m depth	M	100	2,200.00	220,000.00
203A	Ditto exceeding 300 but n.e 360m	M	1	Rate Only	5,000.00
205	Supply and installation of n.i.d 152.4mm (6") diameter plain steel casing heavy duty 4.85mm/152 and 5mm/203 to KS 06-259 and BS 1387.	M	200	2,800.00	560,000.00
206	Supply and installation of n.i.d 152.4mm (6") diameter steel casing (M's Plasma cut well screens provision) heavy duty 4.85mm/152 and 5mm/203 to KS 06-259 and BS 1387.	M	100	2,600.00	260,000.00
207	Supply and installation of filter gravel pack (2-4mm)	Ton	25	3,000.00	75,000.00
208	Development of the boreholes	Hr	12	3,000.00	36,000.00
209	Test pumping and recovery measurements to ascertain borehole yield. (Test pumping for 24hr and recovery measurements for 12hr for the borehole)	Hr	36	3,000.00	108,000.00
210	Construction of borehole head-works around well head by constructing a concrete plinth and a chamber measuring 1m x 1m x 1m with class 20/20 mass concrete floor slab and walls.	No.	1	25,000.00	25,000.00
211	Supply and fix 6" borehole steel cap.	No.	1	2,500.00	2,500.00
212	Supply and fix 10" surface casing	M	10	3,000.00	30,000.00
213	Place a bentonite sanitary seal 3m deep.	LS	1	1,000.00	1,000.00
214	Clay Disaggregate calgon™ injection as sodium hexametaphosphate to accelerate removal of clay matter/improve on water turbidity : includes cost of injection.	kg	30	550.00	16,500.00
215	Allow costs for providing water for all requirements of the contract, field camp, drilling works e.t.c.	Sum	1	15,000.00	15,000.00
216	Collect water samples and carry out water quality analysis (chemical and bacteriological analysis) in a reputable laboratory acceptable to the Project Manager and submit water quality test report.	No.	2	10,000.00	20,000.00
217	Allow costs for collecting formation samples and prepare Geoloical logging charts.	No.	1	10,000.00	10,000.00
218	Complete the prescribed WRMA Borehole drilling completion report and submit to WRMA	No.	1	10,000.00	10,000.00
Total for Drilling 1No. Borehole					1,914,000.00

Table 1. The cost of drilling a borehole

53. That, the cost of equipping one borehole is Kshs. 2,696,300 as indicated in Table 2 below—

BILL NO. 3: CONSTRUCTION OF 24M³ ELEVATED PRESSED STEEL TANKS ON 18M STEEL TOWER

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
	Excavation				
	Excavation shall include shoring, shoring, stabilizing excavated surface and keeping excavations free of water being out, pumping or other means				
401	Excavate to reduced levels in top soil for depth not exceeding 0.25m	M ³	2	1,000.00	2,000.00
402	Excavate for tank foundation 0.25-0.5m	M ³	10	1,200.00	12,000.00
403	Do to but in material other than top soil, rock or hard material depth 0.5-1m	M ³	10	1,200.00	12,000.00
404	Do to but in material other than top soil, rock or artificially hard material depth 1-2m	M ³	10	1,500.00	15,000.00
405	Do to but in rock depth 1-2m	M ³	2	2,000.00	4,000.00
	Filling				
	Filling to completed structure including compaction as specified				
406	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M ³	20	1,000.00	20,000.00
	Disposal of Excavated Materials				
407	Dispose excavated materials other than rock as directed by the Engineer	M ³	12	1,000.00	12,000.00
408	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M ³	2	1,000.00	2,000.00
	In situ Concrete: Provision and placing. Rate to include for shuttering				
	Mass concrete Class 15/20				
409	Blinding layer 50mm thick	M ³	2	10,000.00	20,000.00
	Reinforced Vibrated Concrete Class 25/20				
410	Footing and stub columns for steel columns	M ³	12	10,000.00	120,000.00
	Reinforcement				
	High yield hot rolled ribbed bars BS4446 Rate to include for supply, delivering, cutting, bending, supporting and securing in concrete				
411	High Yield bars	Ton	2	100,000.00	200,000.00
	Presses Steel Tank				
412	Supply and install pressed steel tank 24m ³ capacity complete with roof access hatch, access ladder, foot level indicator, pipework and 18m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1	1,300,000.00	1,300,000.00
	Pipework				
	These are pipes in the vicinity of the tank including connecting the inlet pipe to the pumping main				
413	Supply and fix 28mm diameter GI Class B Tank inlet pipe	M	15	1,000.00	15,000.00
414	Supply and fix 63mm diameter GI Class B Tank	M	24	1,500.00	36,000.00
415	Supply and fix 63mm diameter GI Class B Tank	M	5	1,800.00	9,000.00
416	Supply and fix 63mm diameter GI Class B Tank	M	15	1,500.00	22,500.00
	Valves and fittings				
417	Supply and install DN50 PN10 sluice valve for scour	Nr	1	3,000.00	3,000.00
418	Supply and install DN38 PN10 Sluice valve for film outlet	Nr	1	8,500.00	8,500.00
419	Supply and fix double flanged DN32 90° Short radius bend	Nr	3	7,500.00	22,500.00
420	Supply and fix double flanged DN50 -90° Short radius bend	Nr	8	7,500.00	60,000.00
421	Supply and fix all flanged DN50X50 Tee	Nr	1	1,500.00	1,500.00
422	Supply and fix all flanged DN38X38 Tee	Nr	2	1,800.00	3,600.00
423	DN50 Double flange piece, length 1000mm	Nr	2	2,500.00	5,000.00
424	DN50 Double flange piece, length 300mm	Nr	2	2,000.00	4,000.00
425	DN50 Double flange piece, length 500mm	Nr	2	2,000.00	4,000.00
426	Supply and apply recommended disinfectant and test the tank	Sum	1	25,000.00	25,000.00
Total for Construction of 1No. Elevated Tank					1,538,600.00

Table 2. The cost of equipping a borehole

54. That, the cost of solarizing one borehole is Kshs. 1,058,470 as indicated in Table 3 below—

BILL NO. 2: EQUIPPING OF BOREHOLES					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
301	Allow Provisional Sum of Kshs 450,000.00 to provide, install and commission a submersible pump capable of delivering 20m ³ /hr against a head of 250m or as directed by the Project Manager. NB: Indicate the make of the pump and motor. Size of casing is 150mm. Pump Make: Country of Origin: Make of Motor:	PC	1	450,000.00	450,000.00
302	Provide, install and commission a 3 phase, 415Vac, DOL control panel for the above pump comprising of the following- Provisional a) Appropriate rating contactor b) Appropriate rating thermal overload relay c) Over/under voltage phase failure protection relay d) Voltmeter e) Voltmeter selection switch f) Water level relay g) Appropriate Ammeter h) Appropriate MCCB for the mains i) Appropriate MCCB for the control circuit j) Start, Stop/reset push button (Green marked "START", and Black/Red Marked "STOP/RESET") k) Pilot indicator lights (green marked "PUMP RUN", red marked "OVER LOAD TRIPPED", yellow marked "BOREHOLE LOW", white marked "TANK HIGH" etc. l) Hours run counter range 0 - 99999 hours m) Cable lapping box of appropriate rating	LS	1	100,000.00	100,000.00
303	Enhanced MP204 Blackbox unit to internal circuit NB: A schematic and control wiring diagram MUST be supplied with the starter.	No	1	100,000.00	100,000.00
304	3" class B G J rising main pipe c/w pipe locking clamp including connecting to the existing tank and connecting for both water offices and Mals House boreholes.	M	300	1,500.00	450,000.00
305	Supply of 3" crane sockets to the rising main	No.	50	1,000.00	50,000.00
306	Provide and install one 3" bulk flow meter class B (type and make to be approved by the Project Manager) c/w Non Return Valve at the well head. Rate to include all pipe and fittings at the well head.	No.	1	30,000.00	30,000.00
307	Electrode cable (pair)	M	440	150.00	66,000.00
308	Electrode pencils (pair)	No.	1	30,000.00	30,000.00
309	25mm Dipper tube complete	M	240	120.00	28,800.00
310	1.5mm ² Flat cable for float switch	M	100	120.00	12,000.00
311	2"Ø borehole cover c/w sundries	No.	1	5,000.00	5,000.00
312	1.5mm ² 2-CORE underground armored cable – Electrodes	M	100	1,200.00	120,000.00
313	63A switch type "MEM" or equivalent	No.	1	60,000.00	60,000.00
314	Allow a P.C. Sum for electricity supply and connection to the borehole sites. Contractor is responsible for the application of electricity connection, follow up and for prompt supply and connection of electricity by KPLC. Electricity account to be held in the name of the Employer.	PC	1	250,000.00	250,000.00
315	Add a percentage of items 315 for contractor's overheads and profit.	%	10%	250,000.00	25,000.00
316	Allow a sum for testing and commissioning of the borehole equipping works.	LS	1	15,000.00	15,000.00
319	Provide for float switch to elevated tank and connect to the control panel and pump	sum	1	10,000.00	10,000.00
320	4 FT Copper earth rod complete with clamp	Set	1	5,000.00	5,000.00
321	Lead cable 10.0m ² single core (for earthing)	M	10	800.00	8,000.00
322	Submersible cable rubber sheathed 25mm ² 3 core submersible armored cable	M	200	1,800.00	360,000.00
323	Underground armored cable 25mm ² 3 core	M	55	1,500.00	142,500.00
333	Pump Control House Construction of a well ventilated pump house 3m x 2m internal dimension and 2.2m clear height with concrete roof slab reinforced with Y12 at 150 c/c both directions. Rate to include provision of steel door of gauge 16 (1.5mm thick) metal plates complete with two anti-thaft and weather resistant padlocks all to the approval of the project manager, the walls shall be constructed with 225*225mm stone masonry fine dressed. Place hoop iron 3/4" on every course.	LS	1	300,000.00	300,000.00
334	Fencing Works Construction of borehole area perimeter fence approximately 100m long using 2.1m high chainlink G14 and 85 x 85 x 5mm thick steel angle lines at 2m centre to centre embedded in mass concrete 0.6m deep and diameter strutted at all corners of straight lines	M	100	100.00	10,000.00
335	Provide 6No. Strands of wire G12 and secure the chainlink using binding wire G16	M	100	500.00	50,000.00
336	Provide and fix hinged and lockable steel grided gate 2m wide with frame of 75mm class B pipes embedded in concrete as shall be directed.	Nr	1	20,000.00	20,000.00
Total for Equipping 1No. Borehole					2,698,300.00

Table 3: Cost of solarizing a borehole.

55. The cost of constructing 24M3 elevated pressed steel tanks on 18M Steel Tower is Kshs. 1,636,600 as indicated in Table 4 below—

BILL NO. 3: CONSTRUCTION OF 24M3 ELEVATED PRESSED STEEL TANKS ON 18M STEEL TOWER					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
	Excavation				
	Excavation shall include shoring, shoring, stabilizing excavated surface and keeping excavations free of water being out, pumps or other means				
401	Excavate to reduced levels in top soil for depth not exceeding 0.25m	M3	2	1,000.00	2,000.00
402	Excavate for tank foundation 0.25-0.5m	M3	10	1,200.00	12,000.00
403	Ditto but in material other than top soil, rock or hard material depth 0.5-1m	M3	10	1,200.00	12,000.00
404	Ditto but in material other than top soil, rock or artificially hard material depth 1-2m	M3	10	1,500.00	15,000.00
405	Ditto but in rock depth 1-2m	M3	2	2,000.00	4,000.00
	Filling				
	Filling to completed structure including compaction as specified				
406	Fill and compact selected excavated material other than top soil, rock or artificially hard material	M3	20	1,000.00	20,000.00
	Disposal of Excavated Materials				
407	Dispose excavated materials other than rock as directed by the Engineer	M3	12	1,000.00	12,000.00
408	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M3	2	1,000.00	2,000.00
	In situ Concrete: Provision and placing. Rate to include for shuttering				
	Mass concrete Class 15/20				
409	Blinding layer 50mm thick	M3	2	10,000.00	20,000.00
	Reinforced Vibrated Concrete Class 25/30				
410	Footing and stub columns for steel columns	M3	12	10,000.00	120,000.00
	Reinforcement				
	High yield hot rolled ribbed bars BS4449 Range to include for supply, delivering, cutting, bending, supporting and securing in concrete.				
411	High Yield bars	Ton	2	100,000.00	200,000.00
	Pressed Steel Tank				
412	Supply and install pressed steel tank 24m ³ capacity complete with roof access hatch, access ladder, foot level indicator pipework and 18m steel Tower frame as per the drawings and specifications. Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts, jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bluminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1	1,000,000.00	1,000,000.00
	Pipework				
	These are pipes in the vicinity of the tank including connecting the inlet pipe to the pumping main				
413	Supply and fix 30mm diameter GI Class B Tank inlet pipe	M	15	1,000.00	15,000.00
414	Supply and fix 63mm diameter GI Class B Tank	M	24	1,500.00	36,000.00
415	Supply and fix 63mm diameter GI Class B Tank	M	6	1,500.00	9,000.00
416	Supply and fix 63mm diameter GI Class B Tank	M	15	1,500.00	22,500.00
	Valves and fittings				
417	Supply and install DN50 PN10 sluice valve for scour	Nr	1	3,000.00	3,000.00
418	Supply and install DN35 PN10 Sluice valve for the outlet	Nr	1	8,500.00	8,500.00
419	Supply and fix double flanged DN32 90° Short radius bend	Nr	3	7,500.00	22,500.00
420	Supply and fix double flanged DN50 90° Short radius bend	Nr	8	7,500.00	60,000.00
421	Supply and fix all flanged DN50X50 Tee	Nr	1	1,500.00	1,500.00
422	Supply and fix all flanged DN30X30 Tee	Nr	2	1,800.00	3,600.00
423	DN50 Double flange piece, length 1000mm	Nr	2	2,500.00	5,000.00
424	DN50 Double flange piece, length 300mm	Nr	2	2,000.00	4,000.00
425	DN50 Double flange piece, length 500mm	Nr	2	2,000.00	4,000.00
426	Supply and apply recommended disinfectant and test the tank	Sum	1	26,000.00	26,000.00
Total for Construction of 1 No. Elevated Tank					1,636,600.00

Table 4: Cost of constructing 24 m³ Elevated pressed steel tanks on 18-meter steel tower.

56. That, the total cost of drilling, solarizing equipping and constructing elevated tanks for one borehole is Kshs. 10,683,375.19 as indicated in Table 5 below—

GROUNDWATER EXPLOITATION WITHIN ATHI BASIN AND AUGMENTATION OF COMMUNITY WATER PROJECTS		
SUMMARY SHEET		
BILL NO.	DESCRIPTION	AMOUNT (KSHS)
1	DRILLING OF 1 NO. BOREHOLE	1,914,000.00
2	EQUIPPING OF 1 NO. BOREHOLE	2,698,300.00
3	CONSTRUCTION OF 1 NO. 24M3 ELEVATED PRESSED STEEL WATER TANK ON 18M STEEL	1,638,600.00
4	SOLARIZATION OF BOREHOLES	1,058,470.00
SUB-TOTAL 1		7,309,370.00
ADD 5% CONTIGENCIES AMOUNT		365,468.50
SUB TOTAL 2		7,674,838.50
Add 30% Supervision Costs and Contractual Obligations		1,534,967.70
SUB TOTAL 3		9,209,806.20
ADD 16% VAT		1,473,568.99
GRAND TOTAL		10,683,375.19

Table 5: *Cost of Groundwater exploitation within Athi Basin and Augment of Community Water Projects*

PART FOUR

4. COMMITTEE OBSERVATIONS

Upon hearing from the petitioners and other witnesses, the Committee observed that -

57. The impacts of climate change have significantly affected water service provision, particularly in rural areas and have increased the demand for water resources while simultaneously affecting the availability and quality of water sources.
58. Water-related bodies at the county and national levels are already implementing the proposal including the Ministry of Water Sanitation and Irrigation and other relevant stakeholders.
59. The Petitioner had excluded Nairobi City County and major towns in the prayers which was against the principle of inclusivity. Further, the proposed implementation of the Ward Water Fund lacked inclusivity by all relevant stakeholders including political representatives since wards are political administrative units.
60. County Governments could collaborate with national government and other stakeholders to maintain water projects done by these stakeholders e.g., projects done by the CDF and Development Partners to avoid bureaucracies experienced at different levels of service provision.
61. A ward-based solution is a noble idea that can contribute to addressing the gaps in access to water which can be integrated into the National Water and Sanitation Investment Plan and the respective County Integrated Development Plans (CIDPs) using a Public-Private Partnership (PPP) Model.
62. The average cost breakdown for undertaking drilling, equipping, solarizing of boreholes and construction of elevated tanks was estimated at Kshs. 10,683,275.19 inclusive of supervision costs and contractual obligations. However, the costs may differ in different parts of the country as a result of the varying geological factors for each region.

PART FIVE

5. ISSUES FOR DETERMINATION AS PER THE PRAYERS IN THE PETITION

44. Arising from the findings and observations, the Committee makes a determination on prayers sought in the Petition as follows -

Prayer No. 1: *recommend to the national government to drill, equip and solarize boreholes in each of the 1450 wards across the country except for eighty-five wards in Nairobi and major towns*

45. The Committee -

- (a) Notes that the Fourth Schedule of the Constitution outlines the functions assigned to the two levels of government. With regards to the natural resource of water, the role of the national government is to secure residual water, water protection, hydraulic engineering and ensure the safety of dams.
- (b) Notes that the role of the county government is to implement national government policies on natural resources including water conservation and to provide county public works and services including water and sanitation services. Therefore, the issue of water service provision is a function of the County Government as provided in section 77 of the Water Act.
- (c) Notes that as per the 2022 Annual State of Devolution, there are a total of 11,163 boreholes across all 47 counties, with over 1000 boreholes in Turkana, Siaya and Nairobi City County.
- (d) Notes that the proposal by the petitioner cannot be applied across all counties as each county has its unique needs and fiscal plans or initiatives based on the priorities of the communities it serves.
- (e) Notes that the proposal of the petitioner is cost-intensive as it includes water infrastructural costs and costs on energy to facilitate the water provision.
- (f) Notes that the national government's role is to regulate the development of boreholes and wells through the issuance of permits, the allocation of each aquifer and the spacing of boreholes through the Water Resources Authority.
- (g) However, notes that the National Government also has several programs on groundwater abstraction some that are donor-funded and others that are in collaboration with the County Governments.

- (h) Therefore, is of the view that the proposed ward-based water supply through the drilling of boreholes can be administered through the county government which is mandated with the function of water service provision in the Water Act, 2016 and the Water Services Regulations Legal Notice No.168 of 2021. The national government can support the initiative in rural areas that are not commercially viable under section 94 (3) of the Water Act.
- (i) Notes that the proposal cannot be applied to all counties across the board, due to the differences in demographics and financial priorities of each County. **Therefore, does not recommend the drilling of boreholes in each of the 1450 wards across the country as proposed by the petitioner. The committee recommends that the idea of a ward-based supply of water be considered in the (NAWASIP) National Water and Sanitation Investment and Financing Plan between National Government and County Governments.**

Prayer No. 2: *to amend the Water Act, 2016 to provide for ward-based water supply regulations.*

46. The Committee -

- (a) Notes that the proposal by the petitioner is for the amendment of the Water Act, 2016 to provide for a ward-based approach and water supply regulations.
- (b) Notes that Section 56 of the Water Act provides for the abstraction of groundwater while the Fourth Schedule to the Act sets out the procedure for the abstraction of groundwater.
- (c) Notes that the Water Resources Regulations, 2021 also provide for the abstraction of groundwater and mandates the Water Resources Authority to regulate it, by groundwater allocation guidelines.
- (d) Notes that the Water Act provides for several funds for the Authority, the Regulatory Board, the Water Storage Authority, the Water Sector Trust Fund, and the waterworks development agencies. Each fund serves each body corporate.
- (e) Notes that the Ministry of Water and the Council of Governors are presently undertaking the review of the Water Act to align it with the provisions of the fourth schedule of the Constitution. To ensure that efforts on water service provision are not duplicated and to promote efficiency in the utilization of resources for water.
- (f) Is of the view that the water regulations on ground abstraction are sufficient, and the proposed amendment to incorporate a ward-based approach requires extensive consultation with the County Governments.

(g) Therefore, does not recommend the amendment of the Water Act as proposed by the petitioner. The petitioner may submit a legislative proposal to review the Act, for comprehensive water solution to meet the needs and priorities of all counties.

PART SIX

6. COMMITTEE RECOMMENDATIONS

Pursuant to the provisions of Standing Order 227, the Committee recommends -

47. On the proposal to recommend the national government to drill, equip and solarize boreholes in each of the 1450 wards across the country except for eighty-five wards in Nairobi and major towns. The Committee **recommends that the prayer be rejected;**
48. On the proposal to amend the Water Act, 2016 to provide for ward-based water supply regulations. The Committee **recommends that the prayer be rejected;**

The Committee further recommends that -

49. The approach of ward-based supply of water is considered in the National Water and Sanitation Investment and Financing Plan (NAWASIP) between the National Government and County Governments.

Signed: _____



Date: _____

23-11-2023

THE HON. NIMROD MITHUKA MBAI, M.P.
CHAIRPERSON, PUBLIC PETITIONS COMMITTEE

ANNEXURES

- Annex 1:** Adoption List
- Annex 2:** Public Petition No. 5 of 2023 regarding Ward Based Solution as a Long-Term Remedy to Perennial Water Shortage in Kenya.
- Annex 3:** Minutes of the 13th Sitting of the Committee held on Tuesday, 18th April, 2023.
- Annex 4:** Minutes of the 36th Sitting of the Committee held on Thursday, 6th July, 2023.
- Annex 5:** Minutes of the 81st Sitting of the Committee held on Thursday, 16th November, 2023.
- Annex 6:** Letter Ref: COG/6/57 Vol. 12(141) dated 22nd June, 2023 forwarding written submissions by the Council of Governors
- Annex 7:** Letter Ref. WRA/8/36(39) dated 23rd June, 2023 forwarding written submissions from Water Resources Authority.
- Annex 8:** Letter Ref. AWWDA/ADM/GEN/1/VOL. IV (PE-kdr) dated 30th October, 2023 forwarding submissions from the Athi Water Works Development Agency.





Annex I

REPUBLIC OF KENYA
THE NATIONAL ASSEMBLY
THIRTEENTH PARLIAMENT – SECOND SESSION – 2023
PUBLIC PETITIONS COMMITTEE

ADOPTION SCHEDULE OF THE REPORT ON CONSIDERATION OF PUBLIC
PETITION NO. 05 of 2023 REGARDING WATER-BASED SOLUTION AS A LONG-
TERM REMEDY TO PERENNIAL WATER SHORTAGE IN KENYA

DATE.....16/11/2023.....

We the undersigned Honourable Members of the Public Petitions Committee, do hereby affix our signatures to this Report on the Consideration of **Public Petition No. 05 of 2023 Water-Based Solution as a long-term remedy to perennial water shortage in Kenya** to confirm our approval and confirm its accuracy, validity and authenticity: -

S/NO.	NAME	SIGNATURE
1.	Hon. Nimrod Mbithuka Mbai, M.P. Chairperson	
2.	Hon. Janet Jepkemboi Sitienei, M.P. Vice Chairperson	
3.	Hon. Patrick Makau King'ola, M.P.	
4.	Hon. Edith Vethi Nyenze, M.P.	
5.	Hon. Ernest Ogesi Kivai, M.P.	
6.	Hon. John Walter Owino, M.P.	
7.	Hon. Joshua Chepyegon Kandie, M.P.	
8.	Hon. Maisori Marwa Kitayama, M.P.	
9.	Hon. Bernard Muriuki Nebart, M.P.	
10.	Hon. Bidu Mohamed Tubi, M.P.	
11.	Hon. Caleb Mutiso Mule, M.P.	
12.	Hon. John Bwire Okano, M.P.	
13.	Hon. Peter Mbogho Shake, M.P.	
14.	Hon. Sloya Clement Logova, M.P.	
15.	Hon. Suzanne Ndunge Kiamba, M.P.	





REPUBLIC OF KENYA

THE NATIONAL ASSEMBLY (SECOND SESSION)

CONVEYANCE OF PUBLIC PETITION

(No. 5 of 2023)

**REGARDING WARD BASED SOLUTION AS A LONG-TERM REMEDY
TO PERENIAL WATER SHORTAGE IN KENYA**

1. **Honourable Members**, Article 119 of the Constitution accords any person the right to petition Parliament to consider any matter within its authority. Further, Standing Order 225(2)(b) requires the Speaker to report to the House any Petition other than those presented by a Member.
2. In this regard, **Honourable Members**, I wish to report to the House that my office has received a petition from one *Eng. Victor Okuna of Post Office Box 828, Migori*, calling for the National Government to adapt innovative ways of addressing water problems.
3. **Honourable Members**, the Petitioner notes that many Kenyans do not have access to clean and safe water in adequate quantities contrary to Article 43(d) in the Constitution of Kenya; and, consequently denying the people their other rights as stated in the same Constitution. He alleges that the current water problem experienced in the country is occasioned by lack of proper policies geared towards mitigating the crisis.
4. **Honourable Members**, the Petitioner therefore proposes that the country adapts what he considers to be a long-term solution to water shortage in the country.
5. The Petitioner claims that his proposal will create one of the avenues for mitigating the myriad challenges of climate change, create youth employment and ensure a sustainable supply of water in the rural parts of the country.

Eng Victor Okuna

6. The Petitioner proposes that boreholes be drilled, equipped, and solarized in every ward across the country every year except in the 85 wards in Nairobi County and major towns which have water and sewerage systems. The Petitioner thus prays that this House considers amending the Water Act 2016 to provide for a Ward-Based Water Supply System.
7. **Honourable Members**, having established that the matter raised in the Petition is well within the authority of this House; and further, that the matters raised in this Petition are not pending before any court of law, constitutional or legal body, I hereby commit the Petition to the Public Petitions Committee for consideration pursuant to Standing Order 208A.
8. The Committee is required to consider the Petition and report its findings to the House and to the Petitioner in accordance with Standing Order 227(2).

I thank you.

Wetang'ula
THE RT. HON. MOSES WETANG'ULA, EGH, MP
SPEAKER OF THE NATIONAL ASSEMBLY

Date:

Public Petitions Committee
Nimrod Mwaya MP Kitui East

20

REPUBLIC OF KENYA



THE NATIONAL ASSEMBLY
THIRTEENTH PARLIAMENT (SECOND SESSION)

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PRIVATE PETITION
BY ENG. VICTOR OKUNA ON WARD BASED WATER SOLUTION AS A
LONG-TERM REMEDY TO PERENIAL WATER SHORTAGE IN KENYA.

I, Engineer Victor Okuna, the undersigned, is a citizen of Kenya with the ID 27971612, a male of sound mind, a Renewable Energy Engineer and a resident of Migori county of address P. O. Box 828-40400, Migori. Phone: 0713801506. Email: okuna91@gmail.com

DRAW the attention of the House to the following: -

BACKGROUND 1. That water shortage has been a perennial problem in Kenya for decades and the previous national and county governments have not put in place policies to address water shortage in the country.

1. THAT, that many Kenyans do not have access to clean and safety water; contrary to section 43 sub article 1a of our constitution, on economic and social rights which give every citizen a right to clean and safe water in adequate quantities and can also be read together with Part IV of The Water Act of 2016 which states that 'Every person in Kenya has the right to clean and safe water in adequate quantities and to a reasonable standard of sanitation as stipulated in Article 43 of the constitution of Kenya.
2. THAT, The Water Act of 2016 gave regulations on the management and usage of water resources but did not indicate how and when this clean and safe water in adequate quantities will be supplied to the Kenyans, thus infringing on the rights of the citizens as anchored in article 26 of the constitution -the Bills of Rights which states that every person has the right to life.
3. THAT, that the current situation we are experiencing is as a result of poor policies and inadequate laws that were put forward by previous governments on mitigating droughts in the country;
4. THAT, that many Kenyans especially in ASAL areas are travelling a distance of an average 40 km to get water

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03 NOV 2022
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NATIONAL ASSEMBLY
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09 NOV 2022
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PRIVATE PETITION

BY ENG. VICTOR OKUNA ON WARD BASED WATER SOLUTION AS LONG-TERM REMEDY TO PERENIAL WATER SHORTAGE IN KENYA

5. THAT, the 95% of water pans done by county and national government dried long before the drought because of the seasonal rivers. An example of a story aired by Citizen TV on the status of drought in Kilifi showed that the water pans dried up leaving residents with no option but to travel many km in search of Water;



6. THAT, lack of clean and safe water has made thousands of schools going children skip schools contrary to the article 52 (1)a which gives every child a right to free and compulsory basic education;
7. THAT, there is an urgent need for the National Government to come up with long term solution to water shortage that has affected millions of Kenyans.
8. THAT, on September 11th 2013, the Government of kenya and UNESCO announced the discovery of one of the worlds largest underground water aquifers in the desert, North of Turkana as reported by the guardian posted on their website and can be obtained through this link
<https://www.theguardian.com/environment/africa-wild/2013/sep/11/1>
and that while there is enough underground water, Kenyans still suffer immensely of water shortage
9. THAT, in sharing of national revenue, some regions have lagged behind in terms of water supply hence this prayer will ensure equitable water supply across the country

PRIVATE PETITION

BY ENG. VICTOR OKUNA ON WARD BASED WATER SOLUTION AS A LONG-TERM REMEDY TO PERENIAL WATER SHORTAGE IN KENYA.

10. THAT, Kenyans have lost thousands of their animals because of lack of water, and during severe drought, the National Government, and with assistance from private organizations only give relief food to affected people while ignoring the animals which are source of livelihood to millions of Kenyans;

East Africa drought leaves millions in need

Failed seasonal rains across East Africa will drive millions of people to hunger and poverty unless swift action is taken, an aid group said Thursday.



11. THAT, with the experience from the high cost of electricity bills brought forward by among them, private public partnership, the cost of water to the poor Kenyans may triple if water sector is left to run on public, private partnership
12. THAT, I made a visit to the drought-stricken region of Wajir County and came up with the real situation on the ground before making this petition



13. THAT, the previous governments have always waited until drought sets in, and within that time, its not possible to execute the water supply across the country.
14. FURTHER THAT, efforts to persuade the previous government bore no fruit hence its supposed to be anchored in our laws so that its implementation is not affected by the government of the day;

PRIVATE PETITION
BY ENG. VICTOR OKUNA ON WARD BASED WATER SOLUTION AS A
LONG-TERM REMEDY TO PERENIAL WATER SHORTAGE IN KENYA.

15. **THAT**, the matter presented in this petition is not pending before any tribunal, court of law or constitutional body;

THEREFORE, your humble Petitioners pray that the National Assembly, through the Department of Water & Irrigation: -

1. **Recommends** that the National Government **Drill, Equip and Solarize** at least 2 boreholes per ward per year in each of the 1450 wards (less 85 wards in Nairobi county and in major towns which have water and sewerage line). This prayer if recommended will ensure that each ward **IN THIS COUNTRY** will have more than 10 **fully equipped boreholes in 5 years** and this will solve the perennial drought we have witnessed in the country. This prayers if answered will also address;
 - a. With **Climate Change** hitting African Countries hardest and with Presidents Ruto's commitment to 100% conversion to green energy and to address climatic change, this will be one of the avenues which the government can use to reduce carbon emissions in remote ASAL regions which still use thermal generators to pump water.
 - b. This prayer if answered and anchored in Kenyan laws will ensure school going children pursue their education without any setback caused by seasonal weather changes such as prolonged droughts
 - c. This prayer will ensure that water supply is done before the droughts sets in and avoid future situations like what Kenyans have witnessed in the month of October 2022.
 - d. Will ensure thousands of trained but jobless graduands from TIVETs and polytechnics get jobs to construct thousands of water systems in the villages
The county governments will also hire these skilled labor at the village for maintenance once my prayer of drilling, equipping and Solarizing boreholes have been answered
 - e. This prayer will ensure progressive water supply in Arid and Semi-Arid areas without necessarily hanging on economic wish of the sitting president. Once enshrined in law, it will ensure that each ward receives fully equipped borehole regardless of the political inclination angle of that region hence equitable share of national resources.

PRIVATE PETITION
BY ENG. VICTOR OKUNA ON WARD BASED WATER SOLUTION AS A
LONG-TERM REMEDY TO PERENIAL WATER SHORTAGE IN KENYA.

- f. This petitioner PRAYS that water act of 2016 to be amended by inserting **Ward Based Water Supply Regulation** between Ground Water and Entry on land in the PART III of the Water Act 2016, and should clearly state out how this will be achieved, the department that will execute it as well as the timeline.

The Water Act 2016

- 48—Cancellation of a permit.
- 49—Cancellation or variation of a permit for failure to observe terms conditions.
- 50—Variation of permit following a hydrographical survey.
- 51—Variation of a permit at the request of the permit holder.
- 52—Abandonment of permitted activities.
- 53—Surrender of permits.
- 54—Register of permits.
- 55—Appeals.

Ground Water

- 56—Abstraction of ground water.

Entry on Land

- 57—Entry by permit holder.
- 58—Entry by the Authority.
- 59—Entry by licensee.
- 60—Manner of entry.
- 61—Powers of inspectors.
- 62—Requirement to state name and address.

PART IV—WATER SERVICES

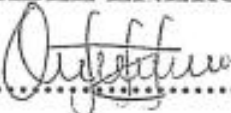
General

- 63—Right to clean and safe water.
- 64—National Water Services Strategy.

And your **PETITIONERS** will ever pray.

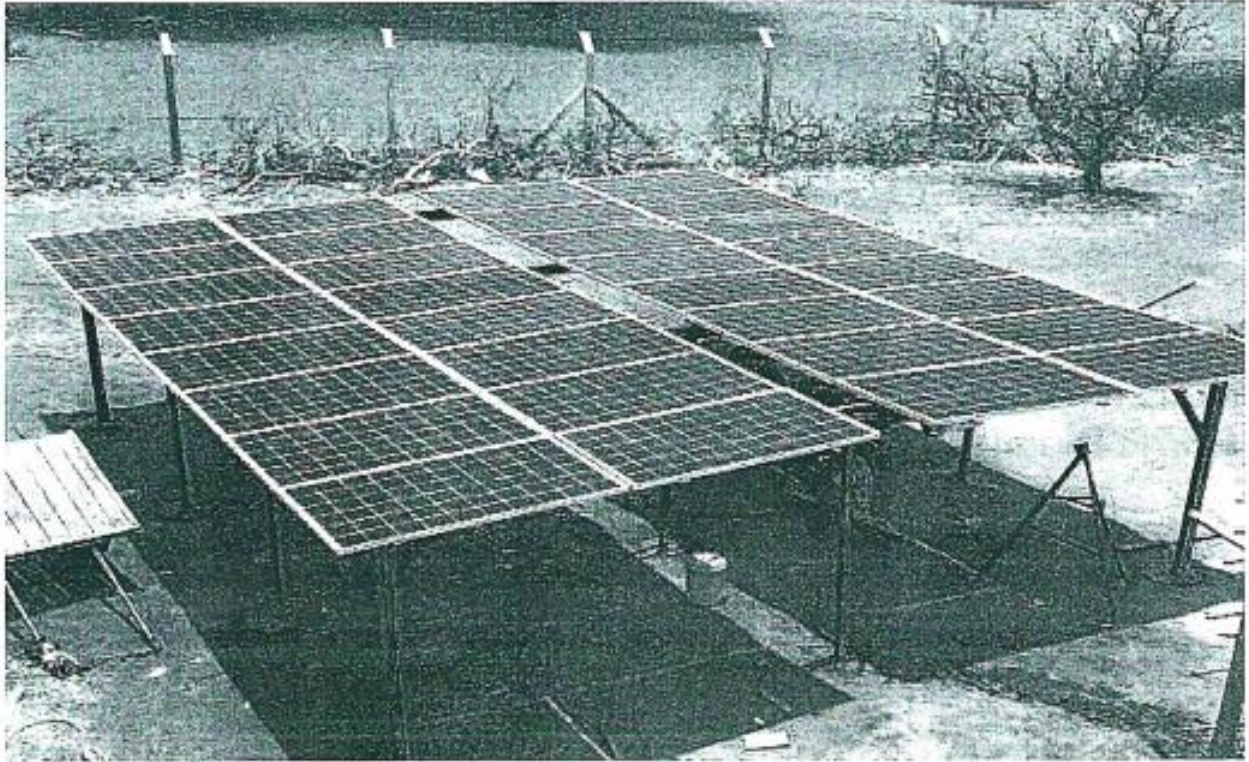
PRESENTED BY:

ENGINEER VICTOR OKUNA,
RENEWABLE ENERGY & WATER ENGINEER.

DATE:..........

Annex -Write Up

The Long Term Solar Water Remedies For Kenya



From,
Greenex Energy Ltd
Nairobi.

Contact Person: Eng. Victor Okuna- 0713801506

Web: <https://greenexenergy.co.ke/> E-mail: vokuna@greenexenergy.co.ke



Lets Save Earth by use of Green Energy

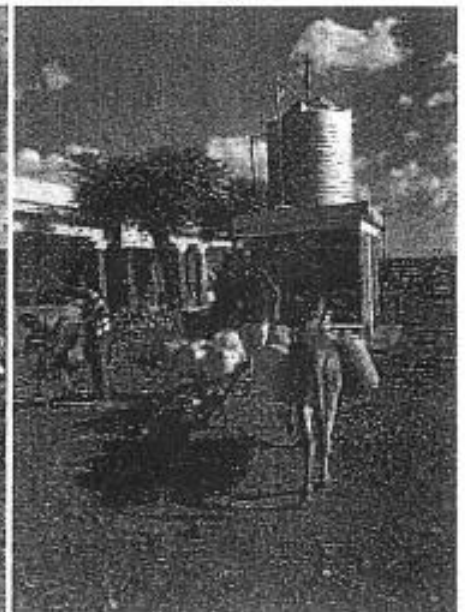
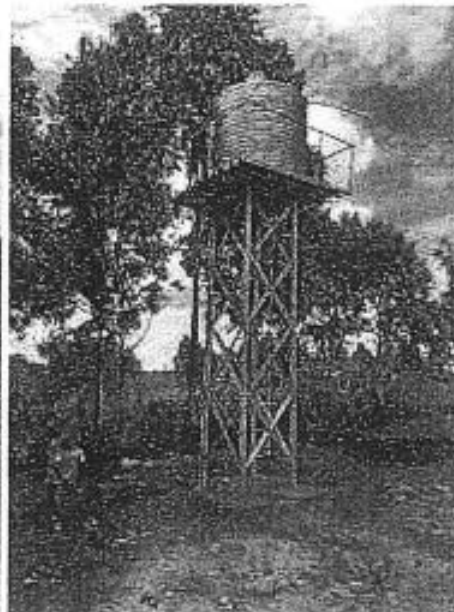
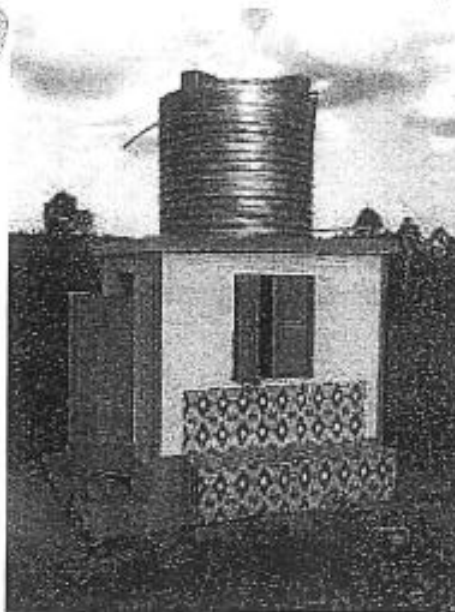


SECTION II: LITERATURE OVERVIEW OF THE PROJECT

- This project seeks to Drill, Equip, Solarize 2 boreholes in each of the 1365 wards (Less 85 Wards in Nairobi).

Project statement

- The project seek to address the water shortage that has affected Kenyans for Years. With the drought in Kenya on another level, this project is aimed at providing long term solutions in drought managements.
- With the government keen on agriculture, irrigation will take centre stage due to changing weather patterns, and this will offer future prospective ways in which government can partner with private entities to do irrigation powered by solar.
- Giving Relief Food is a short term measures on drought, supplying adequate water for animals will be the long term remedy which this project proposal intends to address countrywide.



SECTION II: LITERATURE OVERVIEW OF THE PROJECT

There is a large and growing literature addressing a variety of issues related to Kenya's decade old water crisis. One of the first systematic analyses of Kenya's water resources had been undertaken by the British Crown in 1934 (when Kenya was a colony of the British empire).³ The literature experienced some growth after Kenya gained independence in 1963, with various seminal contributions in the early 1970s.⁴ By the 1980s, much of the literature addressed specific issues, for example the report by the Kenya Water for Health Organization (1985), focusing on the implications of the

Kenyan water crisis on women. By 1990, the first annotated bibliography on soil and water conservation in Kenya had been provided by Karanja and Tefera (1990).

In the more recent years, the focus of Kenya's water crisis has shifted to the impact of climate change and climate variability; see for example the detailed study by Mogaka, Gichere, Davis and Hirji (2006). Furthermore, after decades of policy neglect, the Government of Kenya's (2008) Poverty Reduction Strategy Paper (PRSP) has finally recognized the importance of safe water for its goal to reduce poverty. The PRSP discusses the water situation, challenges to overcome the water crisis, and multiple approaches to tackle the problem.



Photo courtesy of unicef

With drilled water, we will not experience animals dying because drilled water reaches water aquifer which is ideally equivalent to the level of water at sea.

One very interesting article, devised by the Women News Network's Kenya correspondent Gitonga Njeru (2010), focuses on how the water crisis in Kenya has had a tremendous impact on maternal care. The Kakamega Provincial District General Hospital in Kenya lacks sufficient supply of clean water. Njeru says that the patients' health conditions are made worse by severe water shortages. Due to the water shortage, hospitals like Kakamega Provincial District General Hospital have to collect buckets of water, which is then provided to its patients. The water is polluted with bacteria, viruses and parasites and many patients develop different diseases such as typhoid and cholera. Not being able to See Wafula (2010). 3 See Kenya Colony and Protectorate (1934). 4 See for example Padfield (1971) and Carruthers (1973). 33 provide safe water results in a serious threat to the health of expectant mothers. "The facts are clear," Njeru states, "climate change, water supply and sanitation play a responsible role in many of these deaths."

Similar to Njeru's article, there is a blog posted in 2008 that is entitled "Cholera Outbreaks in W. Kenya Blamed on Contaminated Water". According to the blog, health officials said the main reason for cholera outbreaks was because of seepage from the latrines. Senior Deputy Director of Medical Services in Kenya's health ministry, Shahnaaz Sharif, said: "In Kisumu, many wells are built near the latrine; eventually the

sewage seeps into the wells.” One of the leading causes of diseases among Kenyans, such as cholera, is due to a lack of access to safe water.

Kenya's water and sanitation crisis- The cause of 60 % diseases.

With a population of 53 million, 15 percent of Kenyans rely on unimproved water sources, such as ponds, shallow wells and rivers, while 51 percent of Kenyans lack access to basic sanitation solutions. These challenges are especially evident in rural areas and urban slums where people are often unable to connect to piped water infrastructure.

Access to safe water and sanitation at home changes everything for families in Kenya, giving them time to learn, earn, and care for their farms and families

Drilled boreholes provide water with no contamination hence Kenyans will access safe water which will reduce a number of illnesses currently caused by contaminated water fetched from ponds and other unsecure sources.

With President William Ruto's reiteration of 100% conversion to Renewable Energy by 2030, Greenex Energy led by Engineer Victor Okuma who has over 8 years of experience in Renewable Energy and Solar water pumping system devised one of the ways the government can use to solve the water crisis in our villages.

United Nations Carbon Reduction Sustainability

The goal of the 2015 Paris Climate Change Agreement is to limit global warming. This goal requires that we achieve a climate neutral world by the second half of this century. Climate neutrality means living in a way that produces no net greenhouse gas (GHG) emissions.

In 2007, the UN System began working towards becoming climate neutral. Under the leadership of the then Secretary-General Ban Ki-moon, at a 2007 meeting of the UN System Chief Executives Board for Coordination (CEB), the Executive Heads of UN agencies, funds and programmes committed to move their respective organizations towards climate neutrality, and developed the UN Climate Neutral Strategy, which highlights the advantages of harmonization.

At the 2007 CEB meeting, the Executive Heads of UN agencies, funds and programmed committed to:

- Estimate the greenhouse gas emissions of UN system organizations consistent with accepted international standards;
- Undertake efforts to reduce greenhouse gas emissions;
- Analyze the cost implications and explore budgetary modalities of purchasing carbon offsets to eventually reach climate neutrality.

Solar Water Projects are one of the avenues Kenya can adopt to align herself with UN Paris Climate Change Agreement.

Motors are the highest consumers in Energy and with water pumps being powered by motors, those project will put Kenya in the forefront in commitment to climate neutrality.

Conclusion

This project offers long term solution to our perennial problems -the Water shortage. I therefore, on behalf of *Greenex Energy Ltd*, urge our president, **H.E William Ruto** to consider this project and sort out the water crisis that has faced Kenyans in decades. This project will have so much effect on water provision for common mwananchi that it will be the biggest project in Kenya Kwanza government that will directly touch hustlers..

Kenya will only attain clean and sufficient water supply if correct measures are put in place to address water challenge. Such measures include installation of 1,730 water systems as contained in this proposal.

SECTION III: BILL OF QUANTITIES

N.B: Rates include all taxes

DRILLING, EQUIPPING, BUILDING WORKS AND SOLAR INSTALLATIONS FOR COMPLETE BOREHOLE.		
BOQ SUMMARY PAGE		
S/NO.	ITEM DESCRIPTION	AMOUNT (Kshs)
1	TOTAL BILL No. 1 - PRELIMINARIES & GENERAL ITEMS	45,000.00
2	TOTAL BILL No. 2 –BOREHOLE DRILLING	1,488,200.00
3	TOTAL BILL No. 2 - SOLAR PUMPING SYSTEM	2,036,500.00
4	TOTAL BILL No. 3 – PIPELINES	564,500.00
5	TOTAL BILL No. 4– WATER KIOSK 2.4X2.4X3 METRES	418,025.00
6	TOTAL BILL NO. 5 6 M HIGH STEEL TANK STRUCTURE	395,000.00
7	CONTINGENCIES	265,000.00
	Sub Total	5,212,225.00
	Add 16% VAT	833,956.00
	TOTAL TO BE CARRIED TO FORM OF BID	6,046,181.00
	Total Number of Boreholes in 1365 Wards	2,730
	Total Cost of the project	16,506,074,130.00

BILL No. 1.0: PRELIMINARY AND GENERAL ITEMS					
ITEM	ITEM DESCRIPTION	UNIT	QTY	RATE (KSh)	AMT (KSh)
	CLASS A: GENERAL ITEMS				
1.1	Provide and establish project publicity Sign boards as per drawings and instruction from NGCDF office	Nr	1	15000	15,000.00

1.2	Allow a Provision Sum of 30,000.00 for facilitation of the Engineers staff supervision allowances	Sum	1	30000	30,000.00
1.3	Allow for contractor's overhead and profit for Items 1.2	%	1	10000	10,000.00
BILL 1.0 TOTAL CARRIED TO SUMMARY PAGE					55,000.00

BILL No 2: BOREHOLE DRILLING AND DEVELOPMENT

Itm	Scope of Works	Unit	Qty	Rate	Amount
2.1	Mobilization and distribution of the whole drilling unit, personnel, stores and site restoration – including erecting and dismantling	Ls	1	15000	15000
2.2	(i) Drilling of the borehole to the maximum depth as follows:	1	18	2500	45000
	(ii) Open hole diameter of 254mm for surface	1	162	2000	324000
	Open hole diameter of 203mm				0
2.3	Supply and install 203 mm diameter plain steel casing to surface	M	18	3000	54000
2.4	Supply and install 142mm diameter steel plan case	M	120	2640	316800
2.5	Supply and install 152mm diameter slotted (screen) steel casing	M	42	2850	119700
2.6	Supply and install gravel pack of 2-4 mm particle grain size	Ton	10	9000	90000
2.7	Development of completed borehole air lift process	HR	8	1500	12000
2.8	Test Pumping of the borehole to ascertain its discharge	LS.	1	75000	75000
2.9	Supply and insert a special bentonite or cement for grouting purposes	LS	1	15000	15000
2.11	Construct a concrete slab of 1.5m x 1.5x1.5x1m thick of class 20 to support seal to the borehole	M ³	2.25	10200	22950
2.12	Supply water for drilling camp sue	LS	1	1000	1000
2.13	Collect, store and pack the formation drill samples at 2m enteral	NO	125	350	43750
2.14	Supply and install borehole cap.	LS	1	12000	12000
2.15	Prepare and submit above borehole completion report	LS	1	20000	20000
2.15	Allow for hydro-geological survey,	LS	1	50000	50000
2.16	Allow for AIE report	LS	1	30000	30000
2.17	Allow for WRMA Permit	LS	1	35000	35000
TOTAL BILL NO 2 CARRIED FORWARD					1,281,200

BILL 3.0- SOLAR PUMPING SYSTEM

ITE M	DESCRIPTION	UNI T	QTY	RATE (KSH)	AMT (KSH)
Provide, Install ,Test and Commission the following borehole equipment and accessories					
3.1	Supply and installation of equivalent Pump able to pump water	Pcs	1	120000	120000
3.2	Supply and installation of equivalent motor to run the pump	Pcs	1	120000	120000
3.3	Supply and Installation PVC Flat Submersible Cable	M	200	420	84000
3.4	Supply and Installation of Londex Cable	M	200	340	68000
3.5	Upply and Installation of PVC Threaded Borehole Riser Pipe	No	66	3500	231000
3.6	Supply and Installation of PV Modules to power the pump	Pcs	32	15000	480000
3.7	Supply and Installation of Solar Pump Controller	Pcs	1	150000	150000
3.8	Test pumping and Recovery measurements ascertain the borehole yield	UNIT	1	35000	35000
3.9	Supply and Installation of Adapter Box 4*4*3	Pcs	1	7500	7500
3.11	Supply and Installation of 3 phase manual changeover	No	1	5000	5000
3.12	Supply and Installation of Pump Outlet Adaptor set	Nr	1	7500	7500

3.13	Supply and Installation of Armoured Underground Cable	M	50	380	19000
3.14	Supply and Installation of Armoured Underground Cable	M	50	300	15000
3.15	Supply and Installation of Approved Well Probe Sensor	Nr	1	7500	7500
3.16	Supply and Installation of PVC Airline Pipes Class B	M	40	500	20000
3.17	Supply and Installation of Borehole Cover c/w Fittings	Nr	1	35000	35000
3.18	Supply and Installation of Water Meter c/w Flanged Connection Fittings	Nr	1	50000	50000
3.19	Supply and Installation of PV Module Disconnect Switch 900/AC/40A	Nr	1	60000	60000
3.21	Supply and Installation of Sun Switch Light Sensor	Nr	1	10000	10000
3.22	Supply and Installation of 10mm2 Auto Cable Black	M	75	300	22500
3.23	10 mm2 Auto Cable Red	M	75	300	22500
3.24	Supply and Installation of Complete Lightning Arrester	UNT	1	12000	12000
3.25	Compatible Submersible Pump Cooling sleeves	ltm	1	15000	15000
3.26	Allow for all other necessary installation fittings and connection sundries	ltm	1	75000	75000
3.27	Allow for supply of all materials, fabrication, assembly and installation of steel PV Module Structure according to drawings, specifications and Engineer's instructions – to carry the 16 solar panels. The solar panels shall be 4m above the ground	ltm	1	150000	150000
TOTAL BILL 3.0 CARRIED TO SUMMARY PAGE					1,821,500

BILL NO 4: PIPELINES

	DESCRIPTION	UNT	QTY	AMT	RATE
ITM	CLASS E: EARTHWORKS				
	Excavation				
4.1	Excavations shall include for strutting, shuttering, stabilizing excavated surfaces and keeping excavations free of water by bailing out, pumping or other means and backfilling	UNIT	1	20000	20000
	CLASS I: PIPEWORK – PIPES				0
	Rising main				0
4.2	Excavate, Provide, lay and joint, backfill DN 32, PN20 HDPE Pipes in trenches depth not exceeding 1m for clear water rising mains. Rate to include testing and sterilization of the pipeline.	M	500	600	300000
	Distribution pipeline				0
4.3	Excavate, Provide, lay and joint, backfill PPR PN20 in trenches depth not exceeding 1.0 m for distribution pipeline. Rate to include testing and sterilization of the pipeline.	M	100	350	35000
4.4	Supply, lay and joint, backfill DN 50 PPR PN 20 Pipes in trenches depth not exceeding 1.0 m for distribution pipeline. Rate to include testing and sterilization of the pipeline.	M	150	350	52500
4.5	Flanged sluice valve DN 50	No	1	2000	2000
	Pipework -manholes and pipework ancillaries				0
	Valve chamber				0
4.6	Excavate for, provide all materials and construct valve chamber including cover as per specifications and drawings	No	3	3000	9000

4.7	Construct a standard masonry stand point with 2 no taps	Nr	2	10000	20000
TOTAL BILL 4.0 (PIPELINES) CARRIED TO SUMMARY PAGE					438,500
BILL NO 5: WATER KIOSK					
ITM	DESCRIPTION	UNI		QTY	
	Excavation and Filling				
5.1	Excavate for column bases 1.5m by 1.5m from ground depth not exceeding 1.5m	m ³	13	5000	65000
5.2	Extra Over for excavation in rock	m ³	2	8500	17000
	Vibrated Reinforced Class 25/20 (1:2:4)				
5.3	450mm Thick column footing (4 no.)	m ³	4.05	8500	34425
5.4	550mm by 550mm column (4 no.)	m ³	2	7500	15000
	Formwork (cut and fix in position sawn timber formwork or equivalent)				
5.5	Around column footings	m ²	20.8	3500	72800
	Steel Reinforcement				
5.6	12mm diameter (nominal) squared twisted high tensile steel bars in column base	Kg	93.5	620	57970
5.7	16 mm diameter (nominal) squared twisted high tensile steel bars in column base	Kg	29	600	17400
5.8	8mm diameter (nominal) squared twisted high tensile steel bars in column base	Kg	10	800	8000
5.9	6mm diameter (nominal) squared twisted high tensile steel bars in column base (4 in No.)	Kg	20	1000	20000
TOTAL BILL NO 5: CARRIED TO SUMMARY PAGE					307,595
BILL NO 6: 6 METRE HIGH STEEL TOWER					
6.1	Supply, cut, fabricate and fix to form a steel water tank 6 Meters high with steel tube of 75mmX75mmby 4mm with chequered plate, access ladder and square tube rails for holding the tank. The structure to be painted with three layers ogf Aluminium paint	UNIT	1	275000	275000
	PLASTIC TANK				0
	<i>Supply and install on top of elevated tank tower and water kisok.</i>				0
5.11	supply, install and paint with aluminium paint a 10,000 litre water tank on top of the water kiosk	UNIT	1	150000	150000
6.2	supply, install and paint with aluminium paint a 10,000 litre water tank on top of the steel tank structure	No.	1	150,000	1f50,000
TOTAL BILL NUMBER 6 CARRIED FORWARD					575,000
BILL NUMBER 7: Contingencies					
ITE	DESCRIPTION	UNT	QTY	AMT	
7.1	Allow for provision of contingensies which will be approved by the office before usage	Sum	1	88000	88,000
TOTAL BILL NO 7: CARRIED TO SUMMERY PAGE					88,000

SECTION 11 -ECONOMICAL ANALYS OF THE PROJECT

This proposal seeks to address the water challenges in our country by **installing 2 complete water system per ward in each of the 1450 wards across the country.**

Number of Counties covered

=46 counties (Less Nairobi County)

Number of constituencies Covered

=273 constituencies

Number of Wards covered by the project

=1,365 wards

Total number of the complete water system

=1,365 Wards*2 (Less 85 wards in Nairobi County)

= 2,730 water systems

Average Cost of Each Project

=Ksh **6,046,181.00**

Total Cost of the project

= 2,730*6,046,181.00

= Ksh 16,506,074,130.00

= **Ksh 16.5 Billion Shillings.**

That with **Ksh 16.5 Billion Shillings** each of the **1,365 wards can get 2 complete water systems.**

If this model of water supply is adapted, then in the next 5 to 6 years, 90% of Kenyans will have an access to clean, Safe and reliable water powered by sun.

With President Ruto's ambitious and ramp up plan to convert to renewable Energy 100% by 2030, this proposal will offer one of the best avenues for the govenenment to put into practice president's pledge in Renewable Energy.

Energy Saved by the Project.

The average pump rating for the 2900 systems

=5.5 kw

Average solar peak hours in kenya

=7 hours

Total Energy Saved by each solar system

=5.5kw*7Hours

= 38.5 Kwh

Monthly Energy Savings

= 38.5 Kwh*30 days

= 1,155 KWh

Yearly Energy Saved

=1,155 KWh*12 months

$$= 13,860 \text{ KWh}$$

With 2900 water systems, the total energy saved per year

$$= 13,860 \text{ KWh} * 2900$$

$$= 40,194,000 \text{ KWh.}$$

Carbon Emission and Global Warming.

With President William Ruto's reiterating on the need to reduce global warming and 100% transition to renewable Energy by 2030, this project will be the first attempt to put presidents pledge into practice.

1 kWh of electricity generated in Kenya produces **0.233 kg of Carbon gas** which acts a shield or blanket in the outer hemisphere leading to increased heating.

Therefore 40,194,000 kWh will produce

$$= 0.233 * 40,194,000$$

$$= 9,365,202 \text{ KGs of carbon dioxide gas}$$

It therefore means that when this project is duly implemented and put to run on Solar, the total amount of carbon gas we are going to save is more than **9 million kgs of carbon dioxide gas.**

Advantages of a solar water pumping system

- No fuel cost - as it uses available free sun light.
- No electricity required.
- Long operating life.
- Highly reliable and durable.
- Easy to operate and maintain.
- Eco-friendly.

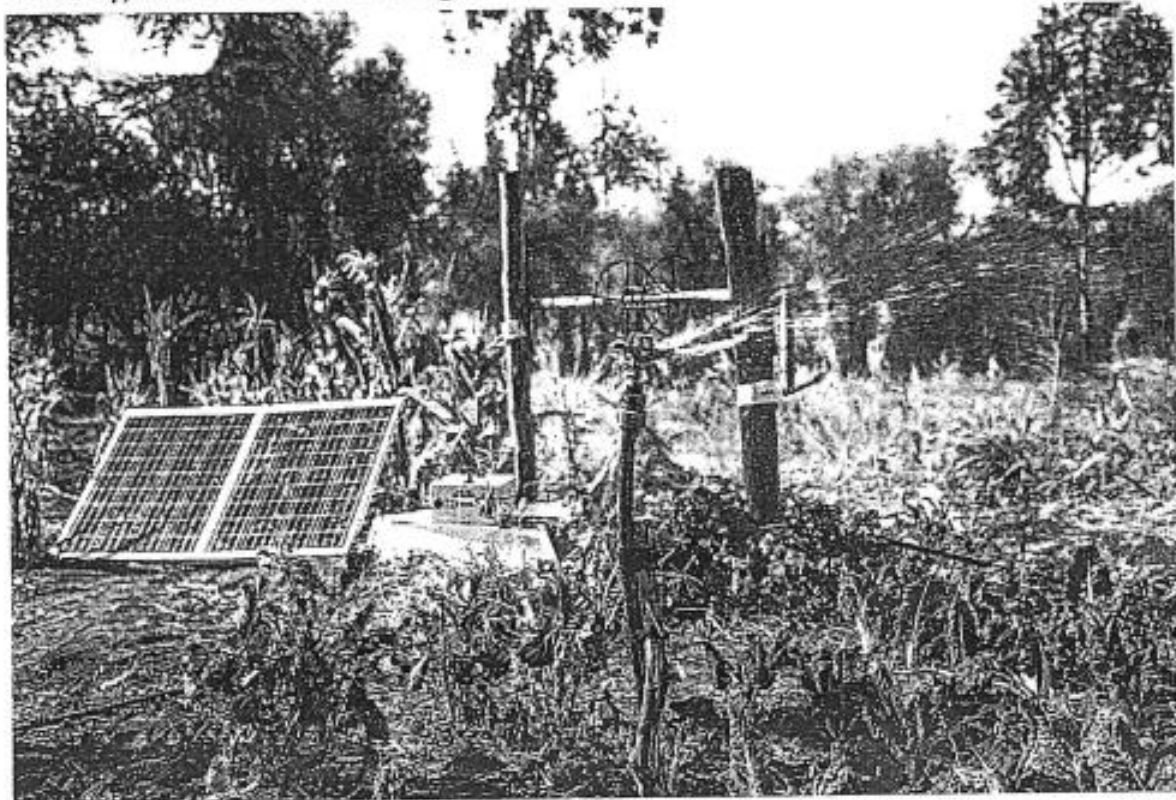
SECTION III –SOLAR WATER & AGRICULTURE

President William Ruto has reiterated that agriculture is going to be the backbone of this nation and went ahead to make his pledge of reducing the cost of fertilizers real. With the weather patterns changing due to global warming and other factors, we must embrace irrigation in order to achieve food security.

Pumps are run by motors powered by electricity or petrol. It is uneconomical to irrigate land using grid or thermal pumps and make substantial profit.

Its in this regard, that Greenex Energy Limited advice the government to come up with plan to partner with private sector and promote solar irrigation as a method of ensuring effective irrigation for efficient food production and security.

We have done a number of Solar water irrigation projects including Wajir and the solar water irrigation is the ultimate solution to food security. For the country to attain food security, then solar water irrigation will ensure we achieve this.



SECTION IV -WATER PANS NOT SOLUTION TO PERENIAL DROUGHT

President Ruto has pledged to construct 100 dams across the country but in arid areas, we do not have enough rivers to sustain dams and they will end up drying even before droughts sets in.

On Sunday, Citizen TV aired the status of drought in Kilifi County and one of the project evidenced clearly that water pans without substantial input from rivers dry out, even after spending between 50 to 100 million shillings.



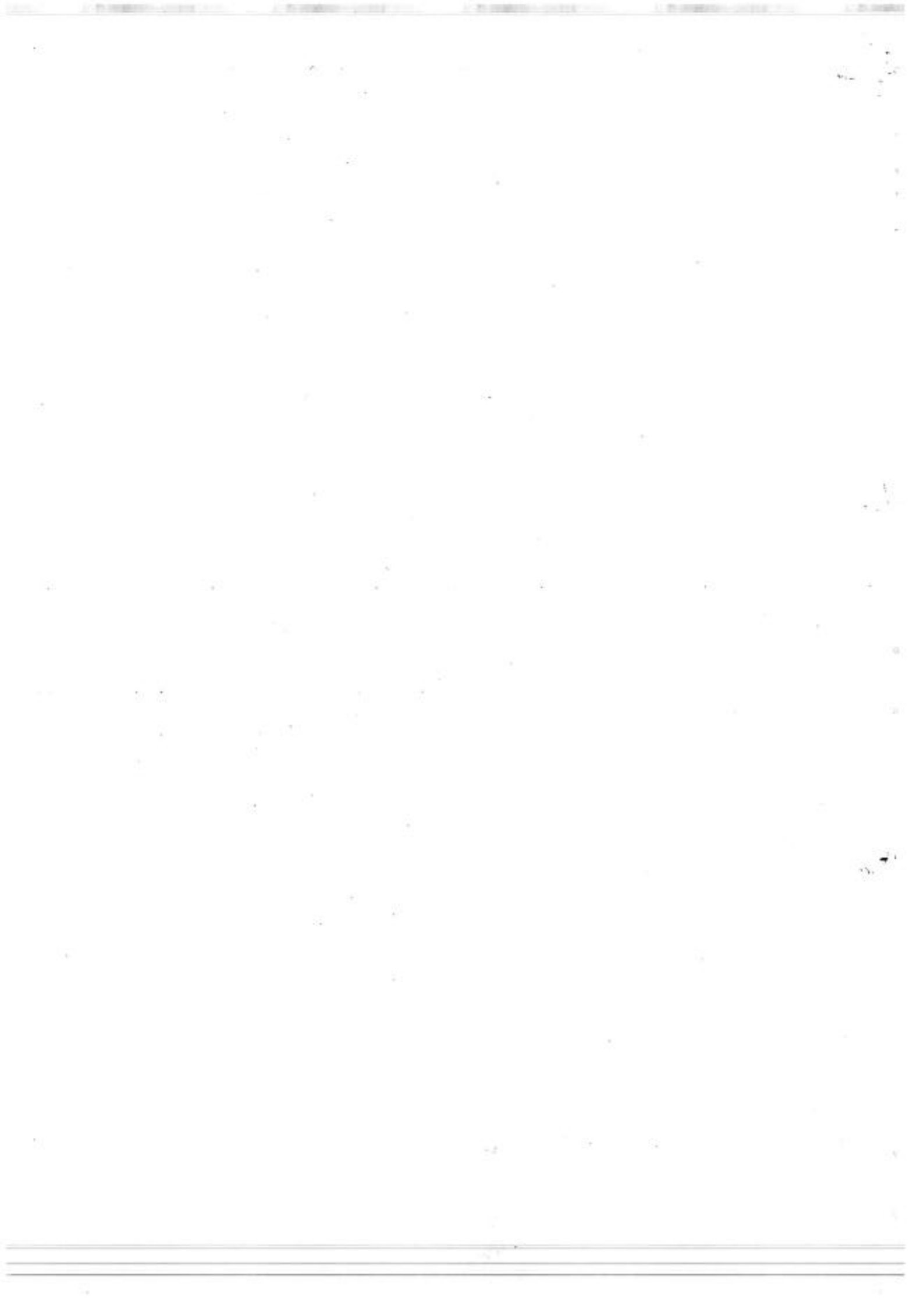
A good dam will cost over half a billion, and if that money is used to drill equip and solarize boreholes, we shall have

Cost of constructing one borehole (Drilling, Equipping & Solarising)
= ksh 6,000,000

Number of boreholes Ksh 500 million (500,000,000) can construct
=500,000,000/6,000,000

= **83 boreholes.**

This will sort water shortage in the whole county, not just a village as could be supplied by the water pan.





REPUBLIC OF KENYA
THE NATIONAL ASSEMBLY

MINUTES OF THE THIRTEENTH SITTING OF THE PUBLIC PETITIONS COMMITTEE HELD ON TUESDAY, APRIL 18, 2023, IN THE COMMITTEE ROOM ON SECOND FLOOR, CONTINENTAL HOUSE AT 10:00 AM

PRESENT

1. Hon. Nimrod Mbithuka Mbai, M.P. - Chairperson
2. Hon. Ernest Ogesi Kivai, M.P.
3. Hon. John Walter Owino, M.P.
4. Hon. Edith Vethi Nyenze, M.P.
5. Hon. Maisori Marwa Kitayama, M.P.
6. Hon. Joshua Chepyegon Kandie, M.P.
7. Hon. Caleb Mutiso Mule, M.P.
8. Hon. (Eng.) Bernard Muriuki Nebart, M.P.

APOLOGIES

1. Hon. Janet Jepkemboi Sitienei, M.P. - Vice Chairperson
2. Hon. Patrick Makau King'ola, M.P.
3. Hon. Peter Mbogho Shake, M.P.
4. Hon. Suzanne Ndunge Kiamba, M.P.
5. Hon. Bidu Mohamed Tubi, M.P.
6. Hon. John Bwire Okano, M.P.
7. Hon. Sloya Clement Logova, M.P.

WITNESSES

1. Eng. Victor Okuna - Petitioner
2. Calvince Odhiambo - Accompanying person
3. Dr. Annete Mbogoh - Executive Director, Kituo cha Sheria
4. Janet Kavulavu - Ag. Coordinator, Advocacy, Governance & Community Partnerships, Kituo cha Sheria
5. Tracy Wachira - Legal Officer, Kituo cha Sheria
6. Rony Odhiambo - Communications Officer, Kituo cha Sheria

SECRETARIAT

1. Mr. Samuel Kalama - Principal Clerk Assistant II
2. Ms. Miriam Modo - Clerk Assistant II
3. Ms. Anne Shibuko - Clerk Assistant II
4. Mr. Shadrack Omondi - Legal Counsel II

5. Ms. Patricia Gichane - Legal Counsel II
6. Mr. Martin Sigei - Research Officer III
7. Ms. Lilian Mburugu - Media Relations Officer

MIN./PPETC/2023/91: PRELIMINARIES

The Chairperson called the meeting to order at 11.30 a.m. and prayers were said by the Hon. Caleb Mutiso, M.P.

MIN./PPETC/2023/92: ADOPTION OF AGENDA

The Meeting was taken through the Agenda as follows: -

1. Prayer
2. Adoption of the Agenda
3. Confirmation of minutes of Previous Sitings
4. Matters Arising
5. Consideration of Public Petition regarding *Access roads for residents of Narok East Constituency*
-Meeting with the Petitioner, the Hon. Aramat Lemanken, MP
6. Consideration of Public Petition regarding *Ward Based Solution as a long term remedy to perennial water shortage in Kenya*
-Meeting with the Petitioner, Eng. Victor Okuna
7. Consideration of Public Petition regarding *Amendment to the Kenya Information and Communications Act*
-Meeting with the Petitioner, Mr. Patrick Kaberia, Executive Director PAWA Africa
8. Consideration of Public Petition regarding *Enactment of Legislation to criminalize and prescribe penalties for the crime of enforced disappearance*
-Meeting with the Petitioner, Dr. Annette Mbogoh Executive Director Kituo cha Sberia Legal Advice Center
9. Any other Business
10. Adjournment & Date of Next Meeting

Owing to non-availability of the Petitioners, item 5 and 7 were dropped off the Agenda. Thereafter, the Proposed Agenda of the Meeting was adopted to constitute business of the Meeting having been proposed by the Hon. Bernard Muriuki M.P. and seconded by the Hon. Caleb Mule, M.P.

MIN./PPETC/2023/93: CONFIRMATION OF MINUTES OF PREVIOUS SITTINGS

Minutes of the Eleventh Sitting held on 22nd March 2023 were confirmed as a true record of the deliberations of the meeting having been proposed by Hon. Maisori Kitayama, M.P. and seconded by Hon. Walter Owino, M.P.

Minutes of the Twelfth Sitting held on 13th April 2023 were confirmed as a true record of the deliberations of the meeting having been proposed by Hon. Walter Owino M.P. and seconded by Hon. Caleb Mule, M.P.

MIN./PPETC/2023/94: MATTERS ARISING

- i. Arising from MIN./PPETC/2023/79 of the Eleventh Sitting, the meeting was informed that the Committee would meet the stakeholders on the Petition regarding implementation of Edu Afya Medical Scheme in public secondary schools on Tuesday 25th April, 2023.
- ii. Arising from MIN./PPETC/2023/88 Question arose as to whether the Petitioners were the people of Nyatike as a whole or the *Kadem* clan. Owing to the diverse backgrounds and interest of the various stakeholders, The Members discussed and agreed that,
 - a) while the Petitioners were descendants of the workers of *Macalder* mines, it would be imperative to visit Nyatike area and meet representatives of the *Kadem* clan and other residents including the Suba and Kuria residents. This would be done alongside the visit to Nyanza and Western IDPs.
 - b) the following stakeholders would appear before the Committee alongside the other petitioners:
 - i. DCC- office of the Lands Board
 - ii. Ministry of Lands
 - iii. National Land Commission

MIN./PPETC/2023/95: MEETING WITH ENG. VICTOR OKUNA REGARDING WARD BASED SOLUTION AS A LONG-TERM REMEDY TO PERENNIAL WATER SHORTAGE IN KENYA

Eng. Victor Okuna appeared before the Committee and presented as follows:

- i. That many Kenyans do not have access to clean and safety water; contrary to section 43 sub-Article 1(a) of the Constitution, on economic and social rights which give every citizen a right to clean and safe water in adequate quantities;
- ii. That despite being a devolved function, the County Government has not created infrastructure to enable access of water be decentralised to village level;

- iii. That funds for development expenditure allocated to county governments are insufficient for development of water related infrastructure;
- iv. That the Water Act of 2016 gave regulations on the management and usage of water resources but did not indicate how and when this clean and safe water in adequate quantities will be supplied to the Kenyans;
- v. That the current situation the country is experiencing is as a result of poor policies and inadequate laws that were put forward by previous governments on mitigating droughts in the country;
- vi. That 95% of water pans done by county and national government dried long before the drought because of the seasonal rivers;
- vii. That lack of clean and safe water has made thousands of schools going children skip schools contrary to the article 52 (1)a which gives every child a right to free and compulsory basic education;
- viii. That there is an urgent need for the National Government to come up with long term solution to water shortage that has affected millions of Kenyans;
- ix. That Kenyans have lost thousands of their animals because of lack of water, and during severe drought, the National Government, and with assistance from private organizations only give relief food to affected people while ignoring the animals which are source of livelihood to millions of Kenyans;
- x. That with the experience from the high cost of electricity bills brought forward by among them, private public partnership, the cost of water to the poor Kenyans may triple if water sector is left to run on public, private partnership;
- xi. That the Water Act of 2016 to be amended by inserting Ward Based Water Supply Regulation between Ground Water and Entry on land in the PART III of the Water Act 2016, and should clearly state out how this will be achieved, the department that will execute it as well as the timeline;
- xii. That a sum of Kshs. 16.2 B be allocated annually for the Water Fund and the implementation be effected using a non-political route; and
- xiii. That the National Government Drill, Equip and Solarize at least 2 boreholes per ward per year in each of the 1450 wards (less 85 wards in Nairobi County and in major towns which have water and sewerage line).

Committee concerns

The Committee raised the following concerns with regards to the presentation by the Petitioner:

a) Prayers of the Petition

The Petitioner was asked to clarify his proposal on implementation of the Ward Water Fund. He explained that he expected it to be distributed like the NG-CDF and assigned an amount in the budget.

The Committee was concerned on what the Petitioner meant by the non-involvement of politicians in the distribution role yet distribution of resources was a political process, and wards are political administrative units. The petitioner said he had no ill will but meant that he wanted the process documented and not subject to discussions by the implementing authority.

b) Management of the Fund

Noting that Water is a devolved function, the Committee asked the Petitioner whether he was advocating for transfer of water from county to National government, because the proposal cannot be implemented through counties in its present format.

The petitioner responded by saying that his interest was for the Water act to be amended to provide for the implementation at county level.

c) Proposed area of coverage

The Committee observed that the Petitioner in his submission had excluded Nairobi County in the prayers of the Petition, which was against the principle of inclusivity.

d) Uniqueness of the proposed water body despite the many funds/ bodies under the Ministry of Water, Sanitation and Irrigation

The Committee wondered why he wanted the proposal implemented in a different manner despite existence of other Water related bodies. The Petitioner stated that their mandate was not clear and proposed one umbrella body to manage the agencies under Water sector.

He asserted that his proposal was unique because it provides a solution at ward level (grass root level).

e) Whether the proposal should be a bill or petition

The Committee sought clarification on whether the Petitioner would like a Bill be published or the Committee goes way of the petition presented. The Petitioner responded that the Water Act be amended to allow for the establishment of a Water Fund.

Committee Resolutions

(a) The Committee to invite the following to give their views on the prayers sought by the Petitioner: -

- i.) Cabinet Secretary responsible for Water, Sanitation and Irrigation on the proposed regulations and the extent of national government's role in protecting water resources with regard to the proposal;
- ii.) Water Resources Authority on the impact of the proposal on water resources and the measures necessary to ensure ground water conservation or sustainable exploitation;
- iii.) Cabinet Secretary responsible for Ministry of Environment, Climate Change and Forestry and NEMA on the environmental implications of the proposal; and

iv.) The views of the Council of Governors on the implications to county governments of the proposal, as regards their function of water service provision.

MIN./PPETC/2023/96: MEETING WITH DR. ANNETTE MBOGOH REGARDING PUBLIC PETITION ON ENACTMENT OF LEGISLATION TO CRIMINALIZE AND PRESCRIBE PENALTIES FOR THE CRIME OF ENFORCED DISAPPEARANCE

Dr. Annete Mbogoh, Executive Director, Kituo cha Sheria appeared before the Committee and presented as follows:

That—

- i. KITUO was the oldest and most experienced non-governmental and human rights organization in East, Central and the Horn of Africa having been established in July 1973 to enhance access to justice for poor, indigent and marginalized communities in Kenya;
- ii. the objectives and mission of the organization as set out in its Constitution are inter alia to set and shape the national and regional agenda on human rights issues including environmental, economic and socio-cultural rights issues as well as monitor implementation by the State of provisions of human and people's rights;
- iii. in the execution of its mandate, KITUO has found that the matter of enforced disappearances and extrajudicial killings has been particularly prominent and yet disturbing within our country Kenya. According to statistics from Missing Voices compiled from 2007, 1349 persons have been victims of extrajudicial killings;
- iv. 256 cases of enforced disappearances have been documented. Majority of these cases have been attributed to the police. Yet, the law, as it is now, is limited to the extent to which especially enforced disappearances can be prosecuted. The courts have hence been faced with challenges in adjudicating such cases;
- v. enforced disappearances which are commonly accompanied by extrajudicial killings, have tarnished the fabric of law enforcement and the rule of law in the country. Unresolved extra-judicial killings and enforced disappearances should now be a concern to every citizen.
- vi. in the year 2017, during the prolonged and contested general elections, the Human Rights Watch documented that the police and armed gangs killed more than 100 people. It was noted that at least 67 people were killed during the first round of voting most of them either shot or beaten to death by police. In 2018 alone, Kenyan human rights groups documented at least 267 cases of extrajudicial killings by police. The Independent Medico Legal Unit (IMLU), a Nairobi based NGO that works on police accountability, documented 152 extrajudicial killings by police. Further, she cited some investigatory reports by the Kenya National Commission for Human Rights (KNCHR) implicate security agencies in enforced disappearances, brutality and extrajudicial killings.

- vii. there has been failure and neglect to institute adequate investigations on extra-judicial killings and enforced disappearances;
- viii. the state of affairs has been exacerbated by the absence of specific legislation criminalizing enforced disappearance. The absence of such provisions hence gives leeway for inadequate investigations and prosecution of enforced disappearance;
- ix. International instruments reaffirm the illegal nature of enforced disappearance under international law and require that enforced disappearance be classified as a crime under national criminal law;
- x. in Africa, Burkina Faso, Senegal and Tunisia have criminalized enforced disappearance in their respective countries in the case of enforced disappearances, while Kenya has only signed the instrument but ratification is pending;
- xi. a key element of the crime of enforced disappearance in the International Crimes Act is that it must be committed in a systematic and widespread fashion. As such, where the high standard set in the International Crimes Act is not fulfilled, perpetrators of the crime of enforced disappearance may have no criminal responsibility.
- xii. the distinction of enforced disappearances from the various offences linked to it is that enforced disappearance occurs by the hand of the State and or its agents and persons of authorization, support and acquiescence of the State. The State also would decline to acknowledge the deprivation of the liberty and or concealment of the fate of the disappeared person. A stand-alone law is necessary to adequately cover this crime.
- xiii. Parliament enacts legislative provisions that will expressly criminalize and prescribe penalties for the crime of enforced disappearances.

a) Choice of word

As regard to the use of the word **Enforced** instead of **Forced**; the petitioner explained that was for purposes of simplification of law for the citizen who uses it. The Petitioner clarified that the term used by international law to mean disappearing not by their own wanting. She agreed that the law can be drafted in simpler terms for ease of understanding simplified for *mwananchi*.

b) Timing of the proposed legislation

As regards to the sudden interest in the legislation despite being in existence for 50 years, and the Petitioner explained that the Petition was informed by the increased wave of extra judicial killings requiring a quick remedy. Further, the institution had faced challenges as an NGO within access to justice system, making it difficult to label offences.

On why the institution did not propose the legislation during drafting of the 2010 Constitution, the petitioner explained that the international instrument had not been drafted, it came into existence in 2010.

On why only four (4) African countries in Africa have criminalized enforced disappearance, the Petitioner explained that there was no goodwill in most of the other African states. The Committee was concerned that the petition focused on the perpetrator and not victim.

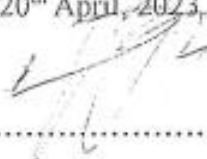
Committee Resolutions

The Committee resolved to invite the following to give their views on the petition: -

- i.) The Attorney General; and
- ii.) The Kenya National Commission on Human Rights.

MIN./PPETC/2023/97: ADJOURNMENT AND DATE OF THE NEXT MEETING

There being no other business, the Chairperson adjourned the meeting at 01:45 p.m. The next meeting would be held on Thursday, 20th April, 2023.

Sign: 

(CHAIRPERSON)

Date..... 18.04.2023



REPUBLIC OF KENYA
THE NATIONAL ASSEMBLY

MINUTES OF THE 36TH SITTING OF THE PUBLIC PETITIONS COMMITTEE HELD ON THURSDAY, JULY 6, 2023, IN THE MAIN CHAMBER, PARLIAMNET BUILDINGS AT 11:00 AM

PRESENT

1. Hon. Janet Jepkemboi Sitienei, M.P. - Vice Chairperson
2. Hon. Joshua Chepyegon Kandie, M.P.
3. Hon. John Walter Owino, M.P.
4. Hon. Maisori Marwa Kitayama, M.P.
5. Hon. Bidu Mohamed Tubi, M.P.
6. Hon. Edith Vethi Nyenze, M.P.
7. Hon. Suzanne Ndunge Kiamba, M.P.
8. Hon. John Bwire Okano, M.P.

APOLOGIES

1. Hon. Nimrod Mbithuka Mbai, M.P. - Chairperson
2. Hon. Patrick Makau King'ola, M.P.
3. Hon. Ernest Ogesi Kivai, M.P.
4. Hon. Caleb Mutiso Mule, M.P.
5. Hon. (Eng.) Bernard Muriuki Nebart, M.P.
6. Hon. Peter Mbogho Shake, M.P.
7. Hon. Sloya Clement Logova, M.P.

IN ATTENDANCE

MINISTRY OF WATER, SANITATION AND IRRIGATION

1. Hon. Alice Wahome - Cabinet Secretary
2. Eng. Patricia Kiane - Deputy Director
3. Eng. Samuel Alima - Secretary
4. Mr. Ismail Chemjor - Advisor
5. Ms. Stella Muthungu - Personal Assistant to the CS

SECRETARIAT

1. Ms. Miriam Modo - First Clerk Assistant
2. Mr. Willis Obiero - Clerk Assistant III
3. Mr. Shadrack Omondi - Legal Counsel II
4. Ms. Patricia Gichane - Legal Counsel II
5. Mr. Martin Sigei - Research Officer III
6. Ms. Lilian Mburugu - Media Relations Officer III

MIN./PPETC/2023/233: PRELIMINARIES

The Chairperson called the meeting to order at 11.00 a.m. and Hon. Edith Vethi Nyenze, M.P. said the prayers.

MIN./PPETC/2023/234: ADOPTION OF AGENDA

AGENDA

1. Prayer
2. Adoption of the Agenda
3. Confirmation of minutes of Previous Sittings
4. Matters Arising
5. **Meeting with CS, Ministry of Water, Sanitation and Irrigation on the following Petitions regarding:**
 - a) *Ward Based Solution as a long-term remedy to perennial water shortage in Kenya*
 - b) *Pollution of River Athi*
 - c) *Desiltation of Matinga Dam in Kitui West Constituency*
6. Any Other Business
7. Adjournment

The proposed Agenda of the Meeting was adopted to constitute business having been proposed by Hon. Bidu Mohamed Tubi, M.P. and seconded by Hon. Maisori Marwa Kitayama, M.P.

MIN./PPETC/2023/235: CONFIRMATION OF MINUTES OF PREVIOUS SITTINGS

The Agenda was deferred.

MIN./PPETC/2023/236: MEETING WITH CS, MINISTRY OF WATER, SANITATION AND IRRIGATION ON THE FOLLOWING PETITIONS REGARDING

Consideration of a Public Petition Regarding Ward Based Solution as a long-term remedy to perennial water shortage in Kenya

The CS appeared before the Committee and submitted as follows—

Introduction

The CS indicated that with regards to the Petition, domestic water access was at 71% across the country while sanitation coverage was at 32% in the urban and 22% in rural areas. However, some areas faced the challenge of climate change leading to lack of natural water sources. That the proposal by the Petitioner was a little bit complicated as the reticulation of water from storage sources was a responsibility of the county governments. Further, many areas did not have systems in place such as piping.

The role of the Ministry in water provision

That the Ministry had undertaken various programs and projects in partnership with different stakeholders to ensure every citizen access safe water. The Ministry often conducted detailed

feasibility studies of a project to determine water source availability, economic feasibility and use of appropriate technology. The need analysis undertaken is based on the area to be served and the population expected to benefit. The solutions adopted must address the problem for the particular locality. The ministry concurred with the Petitioner that in some cases ground water offered solution to water challenges.

The efforts by the Ministry in water provision

That the Ministry was undertaking measures to ensure ground water development projects including—

- a) *Water for schools:* The National Water Harvesting and Groundwater Exploitation Program and Water for Schools Program targeted provision of water in schools and surrounding communities countrywide. In the last two years, the project had enabled drilling of 81 boreholes for small irrigation schemes and service about 35,000 people.
- b) *Kenya Ground Water Mapping Program:* The Ministry had signed a memorandum of understanding with the Kenya National Groundwater Mapping Program to cover the entire country. The program was being implemented in phases in conjunction with county governments, state corporations, development partners and academia among other stakeholders. Currently, the project had covered Southern Turkana and Marsabit County and was in the process of undertaking groundwater mapping of Athi and Tana River Basins.
- c) *The Horn of Africa Groundwater for Resilience Project:* The project was seeking interventions in aquifer systems within regional and trans-boundary implications in ASAL areas. The project was targeting the rehabilitation of 400 rural water schemes and drilling borehole where necessary. Further, it was seeking to develop the stakeholder's capacity and strengthening of enabling environment for sustainable management, access and use of groundwater.
- d) *Integrated Water Resources Assessment in Nairobi Metropolis for Sustainable Use and Management of Groundwater Resources:* The project was targeting integration of water resources assessment within Nairobi Metropolis and to establish the impacts of development within the area on groundwater and surface water resources.
- e) Other programs include borehole drilling by county governments, National Water Harvesting and Storage Authority, Water Works Development Agencies and Development Partners.

Conclusion

The CS stated that—

- i. County governments need to pull up efforts in water provision through mobilization of funds, awareness creation and collaborating with community projects to reticulate water from the available sources despite the maintenance and sustainability.

- ii. The development of water resources and storage of water was squarely within the mandate of the Ministry. However, the Ministry could not achieve the proposals in the Petition without the participation of county governments.

Committee Concerns

- i. On the best methods of realizing the proposal for the county governments to engage with stakeholders such as local community projects, the CS proposed that the county governments could engage and support local community water projects. Further, the counties could collaborate to maintain water projects done by various stakeholders e.g., CDF, Development Partners to avoid bureaucracies experienced at different levels of service provision.
- ii. On the question as to whether the Ministry jointly support CDF water projects by matching the allocated budget, the CS indicated that such an arrangement was possible and had worked out in other projects. However, the Members could amend the NG CDF Act to allow for administration of ward-based solutions to address perennial water challenges.
- iii. On the issue as to why the efforts done by the Ministry or other stakeholders were not getting to the villages, the CS responded that the right to clean water was entrenched and was progressively being realized. Further, the main challenges included low water levels due to climate change.
- iv. The Committee urged the CS to engage the Petitioner as he was seeking to contribute from his expertise to assist the Ministry come up with better ideas. The CS undertook to reach out to the Petitioner to discuss the proposals in the Petition.

Consideration of a Public Petition Regarding Pollution of River Athi

The CS submitted a written submission on the subject matter and further stated that the pollution of River Athi was a concern and the Ministry was aware of the situation and were mobilizing resources to establish huge water treatment plants especially prioritizing the Tana and Athi Rivers.

Committee Concerns

- i. On the status of EPZA sewer system, the CS indicated that the sewer system was old and was constructed in 1993 and needed upgrading. Further, EPZA had continued to provide water services without being controlled by Water Services Regulatory Board (WASREB). Therefore, there were discussions ongoing for EPZA to get out of water provision.
- ii. On the ramifications of the River Athi pollution on the Thwake Dam project, the CS noted that the dam had a capacity of 688 million cubic meters and was at 83% completion with final completion expected by 6th February 2024. Therefore, the Ministry was constantly monitoring activities upstream and water quality for bacteria and chemical analysis.

- iii. Regarding the solutions to addressing the pollution challenges upstream, the CS stated that there were investments going on to provide total sewer correction in Nairobi and its environs. The CS further stated that Nairobi had the capacity of 192,000 cubic meters of sewer yet it produced about 400,000 cubic meters of sewer thus becoming a major source of upstream pollutants into the River Athi.

Consideration of a Public Petition Regarding Desiltation of Matinga Dam in Kitui West Constituency

The CS submitted as follows—

- i. Matinga Dam is in Kitui West Constituency in Kitui County and was constructed in 1955. The design storage capacity of the dam is one million cubic metres and serves a population of 200,000 people in Nguutani, Mutonguni and Kauwi wards, with water for domestic and irrigation use.
- ii. The Dam was first desilted in 1972 and has been accumulating silt since then. Currently, the dam reservoir is entirely silted, and all components of the dam are in a dilapidated state and therefore cannot be utilized by the beneficiary community.
- iii. Tanathi Water Works Development Agency (TAWWDA) has been directed to undertake comprehensive engineering studies & surveys and prepare detailed technical designs for the rehabilitation of Matinga Dam.
- iv. The studies and survey conducted will be for the desilting of the dam, rehabilitation of the dam embankment, spillway and fencing of the dam reservoir area. The Agency will conclude these studies and submit them to the Ministry of Water, Sanitation, and Irrigation by 31st July 2023 for funding consideration.

Committee Concerns

On the status of colonial dams across the country, the CS indicated that there was need for auditing and mapping of all the colonial dams to establish their status. Further, there were about 408 such dams and the Ministry had begun working on some of them using new designs like establishing check dams to arrest the silt before it gets into the main dams. The CS also noted that despite encroachment of the lands allocated for various dams, some of them were strategically located and land was already set aside for them.

MIN./PPETC/2023/237: ANY OTHER BUSINESS AND ADJOURNMENT

There being any other business, the Chairperson adjourned the meeting at 1:15 p.m. The next meeting would be held on Thursday, 6th July, 2023 at 3.00 p.m.

Sign:  _____

(CHAIRPERSON)

Date: 9/8/2023



REPUBLIC OF KENYA
THE NATIONAL ASSEMBLY

MINUTES OF THE 81ST SITTING OF THE PUBLIC PETITIONS COMMITTEE HELD ON THURSDAY, NOVEMBER 16, 2023, IN COMMITTEE ROOM 12, GROUND FLOOR, MAIN PARLIAMENT BUILDINGS, AT 11.00 A.M

PRESENT

1. Hon. Janet Jepkemboi Sitienei, M.P. - Chairing
2. Hon. Joshua Chepyegon Kandie, M.P.
3. Hon. John Walter Owino, M.P.
4. Hon. Ernest Ogesi Kivai, M.P.
5. Hon. Maisori Marwa Kitayama, M.P.
6. Hon. Edith Vethi Nyenze, M.P.
7. Hon. Bidu Mohamed Tubi, M.P.
8. Hon. Caleb Mutiso Mule, M.P.
9. Hon. John Bwire Okano, M.P.
10. Hon. Sloya Clement Logova, M.P.

APOLOGIES

1. Hon. Nimrod Mbithuka Mbai, M.P. - Chairperson
2. Hon. Patrick Makau King'ola, M.P.
3. Hon. (Eng.) Bernard Muriuki Nebart, M.P.
4. Hon. Peter Mbogho Shake, M.P.
5. Hon. Suzanne Ndunge Kiamba, M.P.

SECRETARIAT

1. Mr. Ahmed Kadhi - Senior Clerk Assistant
2. Ms. Miriam Modo - Clerk Assistant I
3. Ms. Willis Obiero - Clerk Assistant III
4. Mr. Shadrack Omondi - Legal Counsel II
5. Ms. Lilian Mburugu - Media Relations Officer III
6. Mr. Martin Sigei - Research Officer III
7. Ms. Felistus Muiya - Protocol Officer

MIN./PPETC/2023/508: PRELIMINARIES

The Chairperson called the meeting to order at 11:00 a.m. and Hon. Bidu Mohamed Tubi, M.P. said the prayers.

MIN./PPETC/2023/509: ADOPTION OF AGENDA

1. Prayer
2. Adoption of the Agenda
3. Confirmation of minutes of previous sittings
4. Matters Arising
5. **Consideration of a Public Petition regarding the banning of Tik-Tok in Kenya**
 - a) *Meeting with the Communication Authority of Kenya (CAK)*
 - b) *Meeting with the Kenya National Commission on Human Rights (KNCHR)*
6. **Consideration and adoption of Public Petition No. 01 of 2023 regarding Poor Implementation of Edu-Afya Medical Scheme in Public Secondary Schools.**
7. **Consideration and adoption of Public Petition No. 05 of 2023 regarding Ward-Based Solution as a long-term remedy to perennial water shortage in Kenya.**
8. Any Other Business
9. Adjournment

Thereafter, the proposed Agenda of the Meeting was adopted to constitute business having been proposed by Hon. Ernest Ogesi Kivai, M.P. and seconded by Hon. Edith Vethi Nyenze, M.P.

MIN./PPETC/2023/510: CONFIRMATION OF MINUTES OF PREVIOUS SITTINGS

The Minutes of the 61st Sitting held on Thursday, 26th September 2023 at 11:00 a.m. was confirmed as a true record of the proceeding having been proposed by Hon. John Bwire Okano, M.P. and seconded by Hon. Maisori Marwa Kitayama, M.P.

The Minutes of the 62nd Sitting held on Thursday, 26th September 2023 at 3:30 p.m. was confirmed as a true record of the proceeding having been proposed by Hon. Joshua Chepyegon Kandie, M.P. and seconded by Hon. Sloya Clement Logova, M.P.

MIN./PPETC/2023/511: CONSIDERATION OF A PUBLIC PETITION REGARDING THE BANNING OF TIK-TOK IN KENYA

Meeting with the Communication Authority of Kenya (CAK)

The meeting was informed that the CAK vide a letter, Ref. CA/LS/002/2023(772) dated 16th November 2023 requested for the meeting to be rescheduled to 30th November 2023. The Committee acceded to the request.

Meeting with the Kenya National Commission on Human Rights (KNCHR)

The Committee was informed that the CEO, KNCHR, Dr. Benard Mogesa, PhD, CPM vide an email dated 16th November, 2023 had submitted an advisory concerning the Petition. The Committee went through the response and highlighted users' rights and fundamental freedoms enshrined and protected by the Constitution and the limitations applicable as well as the various recommendations as follows -

- i.) The Committee should disallow the petition by declining the invitation to ban TikTok as it risks infringing on fundamental rights and freedoms.
- ii.) The Committee nevertheless should consider the reasons given by the petitioner, and in its oversight role, enhance the regulatory mechanism to ensure that the right to access information and freedom of expression is exercised and enjoyed to the maximum extent possible and within the confines of the Constitution and relevant laws.
- iii.) Instead of a complete ban, the State should implement robust content moderation policies focused on identifying and restricting access to harmful content, particularly for minors.

The Commission further made the following specific recommendations -

- i. The State in collaboration with proprietors of TikTok to ensure the development and enforcement of age-verification mechanisms to prevent underage users from accessing inappropriate content and to ensure that its policies and operations align with Kenyan laws and international human rights standards.
- ii. Both the Kenyan Government and proprietors of TikTok should develop a mechanism for regular reviews and audits of TikTok's existing age-rating features as well as its content moderation policies and practices. The Commission was cognizant that a meeting has already been held between H.E the President of the Republic of Kenya and the CEO of TikTok where among others TikTok and the Kenyan government agreed to work together to ensure moderation and monitoring of content on the social media platform.
- iii. Rather than an outright ban, the KNCHR recommends investing in digital literacy programs and awareness campaigns. Empowering users with the knowledge and skills to navigate the digital space safely is an effective long-term strategy. This aligns with the United Nations Guiding Principles on Business and Human Rights, emphasizing the responsibility of the state to protect human rights while promoting business innovation.
- iv. Regular monitoring and review of the contemplated social media Guidelines to gauge their effectiveness and impact (both real and potential) on human rights.

MIN./PPETC/2023/512:

CONSIDERATION AND ADOPTION OF PUBLIC PETITION NO. 1 OF 2023 REGARDING POOR IMPLEMENTATION OF EDU-AFYA MEDICAL SCHEME IN PUBLIC SECONDARY SCHOOLS

The Committee reviewed the draft report and resolved that the CEO, NHIF be invited to appear before the Committee to provide further information on key issues raised in the Petition, especially on the findings of the Siaya and Homa Bay Site Visits.

MIN./PPETC/2023/513:

CONSIDERATION AND ADOPTION OF PUBLIC PETITION NO. 5 OF 2023 REGARDING WARD-BASED SOLUTION AS A LONG-TERM REMEDY TO PERENNIAL WATER SHORTAGE IN KENYA

The Committee reviewed the draft report and adopted the report with the following recommendations pursuant to the provisions of Standing Order 227 -

- i. On the proposal to recommend the national government to drill, equip, and solarize boreholes in each of the 1450 wards across the country except for eighty-five wards in Nairobi and major towns. The Committee recommends that the prayer should be rejected;
- ii. On the proposal to amend the Water Act, 2016 to provide for ward-based water supply regulations. The Committee recommends that the prayer should be rejected;

The Committee also recommends that -

- iii. The approach of ward-based supply of water is considered in the National Water and Sanitation Investment and Financing Plan (NAWASIP) between the National Government and County Governments.

MIN./PPETC/2023/514:

ADJOURNMENT AND DATE OF NEXT MEETING

There being no other business, the Chairperson adjourned the meeting at 1:15 p.m. The next meeting will be held on Tuesday, 21st November, 2023 at 11.00 a.m.

Sign: 
(CHAIRPERSON)

Date: 21-11-2023

NATIONAL ASSEMBLY
RECEIVED
27 JUN 2023
PROCEDURAL, RESEARCH AND JOURNALS
P. O. Box 41842, NAIROBI



Annex 6

DDLSP
27/6/23

COUNCIL OF GOVERNORS

Westlands Delta House 2nd Floor, Waiyaki Way,
P.O. BOX 40401-00100,
Nairobi.

Tel: (020) 2403314, 2403313
E-mail: info@cog.go.ke

Our Ref: COG/ 6/57 Vol.12 (141)

Mr. Samuel Njoroge
Clerk of the National Assembly
Parliament Buildings
NAIROBI.

22nd June 2023

② Head PR
TINJARAP KIRI
27/6/23
③ Kalamua
Fry your
Committee present
Achi
N. to
27/6

Dear Mr. Njoroge

FORWARDING THE COUNCIL OF GOVERNORS WRITTEN SUBMISSION TO THE PUBLIC PETITIONS COMMITTEE REGARDING WARD BASED SOLUTIONS AS A LONG TERM REMEDY TO PERENNIAL WATER SHORTAGE IN KENYA

The above subject matter refers.

Reference is made to your letter Ref: KNA/DLPS/PPETC/CORR/2023/107 dated 16th June 2023 requesting the Chairperson of the Council of Governors to make a presentation and provide information necessary to facilitate consideration of the Public Petition regarding ward based solutions as a long term remedy to perennial water shortage in Kenya.

The Council of Governors recognizes and upholds Article 119 of the Constitution, which guarantees the right of every person to petition Parliament on matters within its authority. As part of our mandate, the Council is committed to considering matters referred to us by the public and thereof providing valuable input.

In this regard, the Council wish to forward the attached written submission for your consideration.

Please accept the assurance of our highest esteem and consideration.

Yours sincerely,

Mary Mwiti
Chief Executive Officer

NATIONAL ASSEMBLY
RECEIVED
25 JUN 2023

NATIONAL ASSEMBLY
RECEIVED
26 JUN 2023
DEPUTY CLERK
J.W.N
P. O. Box 41842 -00100, NAIROBI

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Annex 7

WATER RESOURCES AUTHORITY

NHIF Building, 9th Floor, Wing B,
P.O. Box 45250-00100, Ngong Road,
Nairobi, Kenya

Tel: +254 020 2732291/ 2729048
Fax: +254 020 2729950
Email: info@wra.go.ke
Website: www.wra.go.ke

Ref : WRA/8/36 (39)
Date : 23rd June, 2023

The Clerk of the National Assembly
National Assembly
Continental House- Parliament Buildings
NAIROBI

**RE: MEETING WITH THE PUBLIC PETITIONS COMMITTEE
REGARDING VARIOUS PETITIONS**

Contents of our letter dated 16th June, 2023 (REF. KNA/DLPS/PPETC/CORR/2023/106).

The Authority's Chief Executive Officer (CEO) has been in contact with the Committee Chairperson with a view to seeking the Committee's indulgence in respect to the meeting scheduled for 27th June, 2023.

The CEO has been away from Nairobi on an urgent official engagement and hereby requests the Public Petitions Committee to consider the attached written memorandum (together with the accompanying annexes) submitted on behalf of the Authority. In the event that the Committee needs additional clarification(s) on the report, the Authority is ready to appear before it on an alternative date to be confirmed by the Committee.

Janet Olewe
For: CHIEF EXECUTIVE OFFICER

Cc.

Hon. Nimrod Mbai

Committee Chairman

Public Petitions Committee

National Assembly

Continental House- Parliament Buildings

NAIROBI

Hon. Kuntai Kool

Board Chairman

Water Resources Authority

NHIF Building, 9th Floor Wing B

NAIROBI



REGULATED BY WATER AND SANITATION

Annex 8

Athi Water Works Development Agency
Athi Water Plaza, Muthaiga North Road, Off Kiambu Road
P.O Box 45283 00100 Nairobi
Tel: (+254) 20 -2724292/3. Mobile: (254) 715-688272
E-mail info@awwda go.ke
www.awwda.go.ke

③ Ms Mudo / mths
please lead

When replying please quote our ref: AWWDA/ADM/GEN/1/VOL. IV(PE-kdr)

30th October 2023

Office of the Clerk,
The National Assembly,
Parliament Buildings,
P. O. Box 41842-00100
NAIROBI

① DLPS
Please deal.
03/11/23

② Mr. Kalama
please bring to
the attention of the
Assembly.
13/11/23

Att: Kipkemoi arap Kirui

Dear Sir,

**RE: REQUEST FOR INFORMATION ON THE PUBLIC PETITION REGARDING
WARD-BASED SOLUTION AS ALONG TERM REMEDY TO PERENIAL
WATER SHORTAGE IN THE COUNTRY**

Reference is made to your letter ref: KNA/DLPS/PPETC/CORR/2023/218 dated 18th October, 2023 addressed to AWWDA on the above subject matter.

Please find attached a report detailing the average cost breakdown for undertaking drilling, equipping, solarization of boreholes and construction of elevated tanks as per your request. The approximate cost for a community water supply borehole project is KES 10.68 million inclusive of supervision costs.

In case of any further consultation and clarification on the same, AWWDA remains available to offer professional and technical support.

Yours faithfully,

ENG. JOSEPH KAMAU
AG. CHIEF EXECUTIVE OFFICER

Encl.

NATIONAL ASSEMBLY
RECEIVED
02 NOV 2023
DEPUTY CLERK S. KIOKO
P. O. Box 41842 - 00100, NAIROBI

NATIONAL ASSEMBLY
RECEIVED
02 NOV 2023
CLERK'S OFFICE
P O Box 41842, NAIROBI

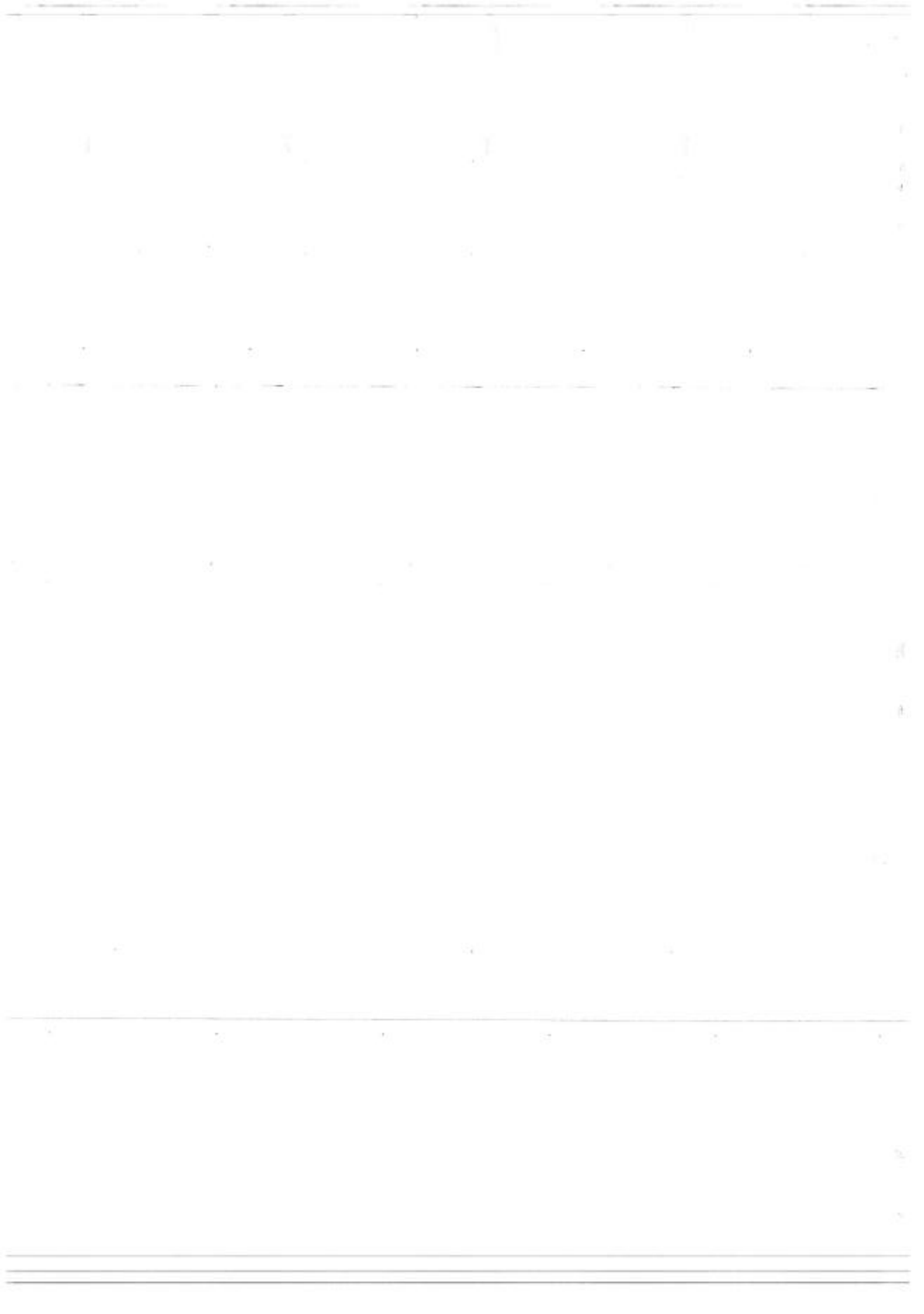
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GROUNDWATER EXPLOITATION WITHIN ATHI BASIN AND AUGMENTATION OF COMMUNITY WATER PROJECTS		
SUMMARY SHEET		
BILL NO.	DESCRIPTION	AMOUNT (KSHS)
1	DRILLING OF 1 NO. BOREHOLE	1,914,000.00
2	EQUIPPING OF 1 NO. BOREHOLE	2,698,300.00
3	CONSTRUCTION OF 1 NO. 24M3 ELEVATED PRESSED STEEL WATER TANK ON 18M STEEL	1,638,600.00
4	SOLARIZATION OF BOREHOLES	1,058,470.00
SUB-TOTAL 1		7,309,370.00
ADD 5% CONTIGENCIES AMOUNT		365,468.50
SUB TOTAL 2		7,674,838.50
Add 30% Supervision Costs and Contractual Obligations		1,534,967.70
SUB TOTAL 3		9,209,806.20
ADD 16% VAT		1,473,568.99
GRAND TOTAL		10,683,375.19



BILL NO. 5 - SOLARIZATION OF BOREHOLES					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
601	Supply and installation of monocrystalline solar modules of 335W capacity capable to power submersible pumps or as directed by the Project Manager	Nr.	20	38,000.00	760,000.00
602	Solar Inverter/Controller for 18.5kw (Hybrid)	Nr.	1	70.00	70.00
603	PV Disconnect Switch 1000/16A	Nr.	1	50,000.00	50,000.00
604	Changeover Switch	Nr.	1	30,000.00	30,000.00
605	Enclosure for PV Disconnect and Controller	Nr.	1	25,000.00	25,000.00
606	Lightening Arrestor	Nr.	1	15,000.00	15,000.00
607	Earthrod c/w clamp	Nr.	1	2,000.00	2,000.00
608	10MM2X2 SOLAR PV cable	m	60	920.00	55,200.00
609	6MM2X2 SOLAR PV cable	m	100	12.00	1,200.00
610	Solar Module steel support structure 3m above the ground surface with members of the following specifications: Angle line 40x40x3mm frame; SHS 50X50X3mm - horizontal and vertical beams; SHS 75x75x3mm stands; SHS 40x40x3mm bracings and MS plate 6mm thick	LS	1	120,000.00	120,000.00
Total for Installine 1 No. Solar System					1,058,470.00



BILL NO. 3: CONSTRUCTION OF 24M3 ELEVATED PRESSED STEEL TANKS ON 18M STEEL TOWER					
ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
	Excavation				
	Excavation shall include strutting,shuttering, stabilizing excavated surface and keeping excavations free of water bailing out, pumping or other means				
401	Excavate to reduced levels in top soil for depth not exceeding 0.25m	M3	2	1,000.00	2,000.00
402	Excavate for tank foundation 0.25-0.5m	M3	10	1,200.00	12,000.00
403	Ditto but in material other than top soil,rock or hard material depth 0.5-1m	M3	10	1,200.00	12,000.00
404	Ditto but in material other than top soil,rock or artificially hard material depth 1-2m	M3	10	1,500.00	15,000.00
405	Ditto but in rock depth 1-2m	M3	2	2,000.00	4,000.00
	Filling				
	Filling to completed structure including compaction as specified				
406	Fill and compact selected excavated material other than top soil,rock or artificially hard material	M3	20	1,000.00	20,000.00
	Disposal of Excavated Materials				
407	Dispose excavated materials other than rock as directed by the Engineer	M3	12	1,000.00	12,000.00
408	Dispose excavated material rock or artificially hard materials on site as directed by the Engineer	M3	2	1,000.00	2,000.00
	In situ Concrete:Provision and placing ,Rate to include for shuttering				
	Mass concrete Class 15/20				
409	Binding layer 50mm thick	M3	2	10,000.00	20,000.00
	Reinforced Vibrated Concrete Class 25/20				
410	Footing and stub columns for steel columns	M3	12	10,000.00	120,000.00
	Reinforcement				
	High yield hot rolled ribbed bars BS4449 Rate to include for supply,delivering,cutting,bending,supporting and securing in concrete.				
411	High Yield bars	Ton	2	100,000.00	200,000.00
	Pressed Steel Tank				
412	Supply and install pressed steel tank 24m ³ capacity complete with roof access hatch,access ladder,first level indicator,pipework and 18m steel Tower frame as per the drawings and specifications,Plate thickness to be 6.0mm for the tank bottom and first level side panels, 4.5mm thick plates for the second and third levels side panels and 2mm for roof. Include for all bolts,jointing material, protection paint and any other necessary materials. Tank panels to be wire brushed and painted externally with one coat of grey primer and two coats of silver aluminium paint. Internally the panels are painted with two coats of non-toxic black bituminous paint. Touch up paint to be applied at site after erection to cover any marks	Nr	1	1,000,000.00	1,000,000.00
	Pipework				
	These are pipes in the vicinity of the tank,including connecting the inlet pipe to the pumping main				
413	Supply and fix 38mm diameter GI Class B Tank inlet pipe	M	15	1,000.00	15,000.00
414	Supply and fix 63mm diameter GI Class B Tank	M	24	1,500.00	36,000.00
415	Supply and fix 63mm diameter GI Class B Tank	M	6	1,500.00	9,000.00
416	Supply and fix 63mm diameter GI Class B Tank	M	15	1,500.00	22,500.00
	Valves and fittings				
417	Supply and install DN50 PN10 sluice valve for scour	Nr	1	3,000.00	3,000.00
418	Supply and install DN38 PN10 Sluice valve for the outlet	Nr	1	8,500.00	8,500.00
419	Supply and fix double flanged DN32 90° Short radius bend	Nr	3	7,500.00	22,500.00
420	Supply and fix double flanged DN50 -90° Short radius bend	Nr	8	7,500.00	60,000.00
421	Supply and fix all flanged DN50X50 Tee	Nr	1	1,500.00	1,500.00
422	Supply and fix all flanged DN38X38 Tee	Nr	2	1,800.00	3,600.00
423	DN50 Double flange piece, length 1000mm	Nr	2	2,500.00	5,000.00
424	DN50 Double flange piece, length 300mm	Nr	2	2,000.00	4,000.00
425	DN50 Double flange piece, length 500mm	Nr	2	2,000.00	4,000.00
426	Supply and apply recommended disinfectant and test the tank	Sum	1	25,000.00	25,000.00
Total for Construction of 1No. Elevated Tank					1,838,600.00



BILL NO. 2: EQUIPPING OF BOREHOLES

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
301	Allow Provisional Sum of Kshs 450,000.00 to provide, install and commission a submersible pump capable of delivering 20m ³ /hr against a head of 250m or as directed by the Project Manager NB: Indicate the make of the pump and motor. Size of casing is 152mm. Pump Make : Country of Origin: Make of Motor:	PC	1	450,000.00	450,000.00
302	Provide, install and commission a 3 phase, 415Vac, DOL control panel for the above pump comprising of the following:- Provisional b) Appropriate rating contactor b) Appropriate rating thermal overload relay c) Over/under voltage phase failure protection relay d) Voltmeter e) Voltmeter selection switch f) Water level relay e) Appropriate Ammeter h) Appropriate MCCB for the mains i) Appropriate MCCB for the control circuit ii) Start, Stop/reset push button (Green marked "START", and Black/Red Marked "STOP/RESET") k) Pilot indicator lights (green marked "PUMP RUN", red marked "OVER LOAD TRIPPED", yellow marked "BOREHOLE LOW", white marked "TANK HIGH" etc. ii) Hours run counter range 0 - 99999 hours m) Cable locking box of appropriate rating	LS	1	100,000.00	100,000.00
303	Enhanced MP204 Blackbox unit to integral circuit NB: A schematic and control wiring diagram MUST be supplied with the starter.	No	1	100,000.00	100,000.00
304	3" class B G.I rising main pipe c/w pipe locking clamp including connecting to the existing tank and connecting for both water offices and Main House boreholes.	M	300	1,500.00	450,000.00
305	Supply of 3" crane sockets to the rising main	No.	50	1,000.00	50,000.00
306	Provide and install one 3" bulk flow meter class B (type and make to be approved by the Project Manager) c/w Non Return Valve at the well head. Rate to include all pipe and fittings at the well head.	No.	1	30,000.00	30,000.00
307	Electrode cable(pair)	M	440	150.00	66,000.00
308	Electrode pencils (pair)	No.	1	30,000.00	30,000.00
309	25mm Disper tube complete	M	240	120.00	28,800.00
310	1.5mm ² Flat cable for float switch	M	100	120.00	12,000.00
311	2"x6" borehole cover c/w sundries	No.	1	6,000.00	6,000.00
312	1.5mm ² 2-CORE underground armoured cable - Electrodes	M	100	1,200.00	120,000.00
313	63A switch fuse "NEW" or equivalent	No.	1	60,000.00	60,000.00
314	Allow a P.C. Sum for electricity supply and connection to the borehole sites. Contractor is responsible for the application of electricity connection; follow up and for prompt supply and connection of electricity by KPLC. Electricity account to be held in the name of the Employer.	PC	1	250,000.00	250,000.00
315	Add a percentage of items 315 for contractor's overheads and profit.	%	10%	250,000.00	25,000.00
316	Allow a sum for testing and commissioning of the borehole equiping works.	LS	1	15,000.00	15,000.00
319	Provide for float switch to elevated tank and connect to the control panel and pump	sum	1	10,000.00	10,000.00
320	4 FT Copper earth rod complete with clamp	Set	1	5,000.00	5,000.00
321	Lead cable 10.0m ² single core (for earthing)	M	10	800.00	8,000.00
322	Submersible cable rubber sheathed 25mm ² 3 core submersible armored cable	M	200	1,800.00	360,000.00
323	Underground armored cable. 25mm ² 3 core	M	95	1,500.00	142,500.00
	Pump Control House				
333	Construction of a well ventilated pump house 3mx2m internal dimension and 2.2m clear height with concrete roof slab reinforced with Y12 at 150 c/c both directions. Rate to include provision of steel door of gauge 16 (1.5mm thick) metal plates complete with two anti-theft and weather resistant padlocks all to the approval of the project manager. the walls shall be constructed with 225*225mm stone masonry fine dressed. Place hoop iron 3M" on every course.	LS	1	300,000.00	300,000.00
	Fencing Works				
334	Construction of borehole area perimeter fence approximately 100m long using 2.1m high chainlink G14 and 65 x 65 x 5mm thick steel angle lines at 2m centre to centre embedded in mass concrete 0.6m deep and diameter struffed at all corners of straight lines	M	100	100.00	10,000.00
335	Provide 6No. Strands of wire G12 and secure the chainlink using binding wire G16	M	100	500.00	50,000.00
336	Provide and fix hinged and lockable steel grided gate 2m wide with frame of 75mm class B pipes embedded in concrete as shall be directed.	Nr.	1	20,000.00	20,000.00
Total for Equipping 1No. Borehole					2,696,300.00



BILL NO. 1: DRILLING OF BOREHOLES

ITEM NO.	DESCRIPTION	UNIT	QTY	RATE (KSHS)	AMOUNT (KSHS)
201	Drilling of 200mm (8") diameter borehole from 0 - n.e 100m below surface.	M	100	2,800.00	280,000.00
202	Ditto but 100 - n.e 200m depth	M	100	2,400.00	240,000.00
203	Ditto but 200 - n.e 300m depth	M	100	2,200.00	220,000.00
203A	Ditto exceeding 300 but n.e 360m	M	1	Rate Only	5,000.00
205	Supply and installation of n.l.d 152.4mm (6") diameter plain steel casing heavy duty 4.85mm/152 and 5mm/203 to KS 06-259 and BS 1387.	M	200	2,800.00	560,000.00
206	Supply and installation of n.l.d 152.4mm (6") diameter steel casing (M/s Plasma cut well screens provision) heavy duty 4.85mm/152 and 5mm/203 to KS 06-259 and BS 1387.	M	100	2,600.00	260,000.00
207	Supply and installation of filter gravel pack (2-4mm)	Ton	25	3,000.00	75,000.00
208	Development of the boreholes	Hr	12	3,000.00	36,000.00
209	Test pumping and recovery measurements to ascertain borehole yield. (Test pumping for 24hr and recovery measurements for 12hr for the borehole)	Hr	36	3,000.00	108,000.00
210	Construction of borehole head-works around well head by constructing a concrete plinth and a chamber measuring 1m x 1m x 1m with class 20/20 mass concrete floor/slab and walls.	No.	1	25,000.00	25,000.00
211	Supply and fix 6" borehole steel cap.	No.	1	2,500.00	2,500.00
212	Supply and fix 10" surface casing	M	10	3,000.00	30,000.00
213	Place a bentonite sanitary seal 3m deep.	LS	1	1,000.00	1,000.00
214	Clay Disaggregate calgon™ injection as sodium hexametaphosphate to accelerate removal of clay matter/improve on water turbidity : includes cost of injection.	kg	30	550.00	16,500.00
215	Allow costs for providing water for all requirements of the contract, field camp, drilling works e.t.c.	Sum	1	15,000.00	15,000.00
216	Collect water samples and carry out water quality analysis (chemical and bacteriological analysis) in a reputable laboratory acceptable to the Project Manager and submit water quality test report.	No.	2	10,000.00	20,000.00
217	Allow costs for collecting formation samples and prepare Geological logging charts.	No.	1	10,000.00	10,000.00
218	Complete the prescribed WRMA Borehole drilling completion report and submit to WRMA	No.	1	10,000.00	10,000.00
Total for Drilling 1No. Borehole					1,914,000.00

