



OUR REF: NJ/MEMORANDA/ENERGY/2022-8

YOUR REF: TBA

1 September 2022

**Ministry of Energy**  
Kawi Complex  
Off Red Cross Road  
P.O. Box 30582 - 00100  
**NAIROBI**

Dear Sir or Madam,

**SUBMISSIONS ON THE DRAFT KENYA ENERGY WHITE PAPER: KENYA ENERGY SECTOR ROADMAP 2040**

Set out below is our response to the call for comments on the captioned draft energy white paper.

We laude the Ministry for initiating this process and look forward to further opportunities for broad public engagement on the proposed energy road map. We trust that future opportunities for consultation will allow for more time to facilitate such engagement.

Sincerely,

**Natural Justice – Lawyers for Communities and the Environment**

**SUBMISSION ON THE DRAFT KENYA ENERGY WHITE PAPER: KENYA ENERGY SECTOR ROADMAP 2040**

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## Overview

We applaud the White Paper's support [proposal] [plan] to advance low-carbon electricity which is to be achieved by staying the course on "the current shift towards a zero-carbon electricity mix".<sup>1</sup> This is achievable in Kenya given the large and mostly untapped renewable energy resources the country enjoys, and the strides already made to install renewable generation capacity that currently meets over 75% of Kenya's installed generation capacity. Kenya's accomplishments to date puts the nation on track to meet our commitment to transition to 100% clean energy by 2030, assuming that we stay the course.<sup>2</sup>

However, we are deeply concerned that the White Paper's proposal to add new coal and gas to Kenya's energy mix runs counter to the nation's stated ambitions and would undermine Kenya's internally recognized leadership on clean energy and the nation's ability to meet its international commitments. New gas and coal generation would lock-in both carbon emissions and high-priced electricity generation. The International Renewable Energy Agency projects that "74 per cent of all new solar PV projects commissioned over the next two years that have been competitively procured through auctions and tenders will have an award price lower than new coal power."<sup>3</sup> Renewable energy generation already out-competes fossil generations in most markets today and prices continue to decline. Our concern is not lessened by the reference to gas as a "transition" fuel, as any new generation facility built today would have a 30 or more-year lifespan and either become a stranded asset when its generation becomes economically unviable, or its high-priced electricity would be passed on to Kenyan electricity consumers. Finally, any reference to coal as a "transition" fuel is misguided; so-called transition fuels are lower-carbon fuels that emit less CO<sub>2</sub> than coal and oil which have a higher carbon content.<sup>4</sup>

## Comment 1: Endorsement of natural gas and coal as transition sources of energy

The White Paper, at page 29, 35 and 38 suggests Kenya should explore alternative fossil fuels such as natural gas and coal, in addition to nuclear energy, as generation options to complement supply from existing green energy and facilitate the transition to low carbon electricity. We respectfully submit that this is wrong headed and would be disastrous for the Kenyan economy and for the nation's ability to meet its international climate commitments.

### *Natural gas*

Natural gas is cited among approaches for exploration in the decarbonization of Kenya's energy mix.<sup>5</sup> This is presumably premised on the Least Cost Power Development Plan, 2020 – 2040's (LCPDP) reference to natural gas among the list of planned projects.<sup>6</sup> However, it is worth noting that the LCPDP is itself skeptical about the prospect of natural gas as a source for power generation given the early stage of exploration<sup>7</sup>, price volatility and prohibitive investment costs of construction

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<sup>1</sup> White Paper, p. 13

<sup>2</sup> Kenya to fully transition to clean energy by 2030, President Kenyatta says, 21 November, 2021, <https://www.president.go.ke/2021/11/02/kenya-to-fully-transition-to-clean-energy-by-2030-president-kenyatta-says/>

<sup>3</sup> See: <https://www.irena.org/newsroom/pressreleases/2021/Jun/Majority-of-New-Renewables-Undercut-Cheapest-Fossil-Fuel-on-Cost>

<sup>4</sup> Please see: <https://www.sciencedirect.com/science/article/pii/S1364032120308364#:~:text=Transition%20fuel%20in%20this%20context,the%20near%20future%20%5B3%5D>.

<sup>5</sup> White Paper, p. 42

<sup>6</sup> White Paper, Figure 28 at p. 44

<sup>7</sup> Least Cost Power Development Plan 2020 - 2040, p. 60

of new pipelines and transport of gas in the form of liquified natural gas. For this reason, the LCPDP itself notes that use of gas would be restricted to the vicinity of gas fields and existing pipeline networks.<sup>8</sup>

In our view, the recommendation of natural gas (and indeed coal)<sup>9</sup> as transition fuel is counterproductive to all gains made so far in Kenya's efforts towards achieving an economy that is entirely fueled by reliable, cost-efficient clean energy. Energy, economic and scientific experts continue to discourage countries from making new investments in coal and gas at a time when clean energy out-competes fossil energy in most markets and there is a significant risk of stranded assets and/or locking in high priced generation that will be a drag on national economies. Many countries are already decommissioning and moving away from fossil fuel investments. The White Paper itself observes that peak fossil fuel demand could come as early as 2025 given global net-zero commitments.

### ***Coal***

The notion of coal as a transition energy source is both deeply problematic and perplexing [ludicrous] as the definition of a transition fuel is a lower-carbon fuel, e.g., natural gas, that substitutes for a higher carbon content fossil fuel such as coal or oil to reduce CO<sub>2</sub> emissions in the short term while clean energy capacity is deployed. A transition fuel is a bridge fuel between the most polluting fossil fuels and clean energy technologies and is considered as a temporary approach as it still emits CO<sub>2</sub>.

Moreover, the economics of coal are not good for the country given the high cost of construction and generation, volatile coal prices<sup>10</sup> high public health, social and environmental costs, and general global divestment trends. While some of these risks are acknowledged in the White Paper, there appears to be a complete disconnect between the acknowledgement of the negative economic and social impacts of coal and the draft 2040 energy roadmap for the country.

If Kenya invests in new gas or coal powered plants, there are three key significant implications that have not been addressed in the White Paper:

- Higher electricity prices for Kenyan consumers, and
- Carbon lock-in and Stranded Assets

### ***Higher electricity prices for Kenyan consumers***

Kenyan electricity consumers continue to bear the burden of high electricity costs. Compared to a global average of USD 0.138/kWh, Kenyan households were estimated to be paying USD 0.209/kWh according to a 2021 analysis.<sup>11</sup> The proposals for new fossil fuel generation creates the real risk of maintaining or increasing unreasonably high electricity costs for Kenyans given rising investment costs in the coal sector, litigation risk, and the enormous public health and environmental externalities of coal.

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<sup>8</sup> Least Cost Power Development Plan 2020 – 2040, p.60

<sup>9</sup> White Paper, p. 28

<sup>10</sup> Before the Russian invasion of Ukraine sent commodity price soaring, the World Bank was warning that prices of coal and natural gas remain highly vulnerable to weather-related conditions and low global inventories increasing the risk of shortages and price spikes. <https://blogs.worldbank.org/opendata/energy-market-developments-natural-gas-and-coal-prices-surge-amid-constrained-supply>.

<sup>11</sup> Global Petrol Prices, Electricity Prices, [https://www.globalpetrolprices.com/electricity\\_prices/](https://www.globalpetrolprices.com/electricity_prices/)

*Rising investment cost:* Financial and insurance stakeholders are increasingly divesting from fossil fuels.<sup>12</sup> The consequence of this is that the cost of finance and credit for new fossil fuel projects, and coal in particular, is on an upward trajectory.<sup>13</sup>

*Litigation risk:* new coal development also carries significant litigation risk. This is among the factors contributing to the low number of coal-fired projects reaching financial close.<sup>14</sup> Litigation risk also may not be covered by insurers, hence represent a potential added cost that could render projects unviable.<sup>15</sup>

*Externalised costs:* the White Paper fails to account for the externalized costs of coal on health, environment, and livelihoods. For example, it is projected that 1,600 premature deaths and 800 low birthweight babies have been projected as a result of the pollution from the proposed Coal Plant in Lamu over its lifecycle.<sup>16</sup> Looked at another way, a tonne of CO<sub>2</sub> is estimated to cause loss and damage of USD 417.<sup>17</sup> Considering the annual projections of 2.2 million tonnes of greenhouse gas (GHG) emissions,<sup>18</sup> the annual social cost of coal would therefore be approximately USD 917.4 million annually for Kenya.

The risks briefly noted above are further compounded by the high decommissioning, capital expenditure costs already acknowledged in the paper.

### *Risk of Carbon Lock-In and Stranded Assets*

#### *Carbon Lock-In*

The White Paper correctly advocates for an expansion of renewable energy capacity, a proposal in line with the country's vast renewable energy potential, global investment trends, and the energy equity and access aspirations of a just transition. Proposing new gas and coal as transition fuels creates the risk of carbon lock-in.<sup>19</sup> It would be foolhardy to imagine that coal or natural gas could ever really be transition sources of energy. Such a pathway necessarily involves expensive investments with lengthy project lifetimes. Furthermore, they would require further investment in associated infrastructure – pipelines, energy grids, etc. which would limit the ease of shifting from these pathways.

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<sup>12</sup> Coal Divestment, Institute for Energy Economics and Financial Analysis, <https://ieefa.org/coal-divestment>

<sup>13</sup> Wave of Institutional Divestment from Coal, S&P Global Market Intelligence, <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/wave-of-institutional-divestment-from-coal-mining-generation-develops-in-2019-56263503#:~:text=Under%20the%20new%20policy%2C%20the,of%20their%20power%20from%20coal.> ; Coal financing costs surge as investors opt for renewable energy, The Guardian, <https://www.theguardian.com/environment/2021/apr/19/coal-financing-costs-surge-as-investors-opt-for-renewable-energy>

<sup>14</sup> White Paper, p. 31

<sup>15</sup> US fossil fuel firm sues insurer for refusing to cover climate law suit, The Guardian, <https://www.theguardian.com/environment/2022/aug/30/us-fossil-fuel-firm-aloha-petroleum-sues-insurer-aig-for-refusing-to-cover-climate-lawsuit#:~:text=Earlier%20this%20year%2C%20AIG%20announced,where%20it%20needs%20to%20be%E2%80%9D.>

<sup>16</sup> Impacts on Community of the Proposed Coal Plant in Lamu, UNEP Perspectives, Issue No. 31, p.5 [https://wedocs.unep.org/bitstream/handle/20.500.11822/25363/Perspectives31\\_ImpactCoalPlantLamu\\_28\\_032018\\_WEB.pdf?sequence=1&isAllowed=y](https://wedocs.unep.org/bitstream/handle/20.500.11822/25363/Perspectives31_ImpactCoalPlantLamu_28_032018_WEB.pdf?sequence=1&isAllowed=y)

<sup>17</sup> Katharine Ricke, et al, Country-level social cost of carbon (2019), <https://www.nature.com/articles/s41558-018-0282-y>

<sup>18</sup> White Paper, p.29

<sup>19</sup> See SEI Primer on Carbon lock-in, [seio.org/featured/qa-what-is-carbon-lock-in/](https://seio.org/featured/qa-what-is-carbon-lock-in/)

The proposal to sink substantial investment costs for new fossil fuels whose necessity is in doubt exacerbates the risk of carbon lock-in with dire long-term consequences for climate commitments and policy commitments to transition to 100% renewable energy.

### *Stranded Assets*

When assets can no longer earn a return on investment, they become stranded. As the levelized cost of electricity from renewable sources continues to fall, there is an increasing risk of fossil fuel energy projects being stranded. The International Renewable Energy Agency has estimated that more than \$1 trillion of investments in power plants unable to compete with lower-cost renewables are at risk globally of becoming stranded assets.<sup>20</sup>

In the case of the publicly funded fossil fuel projects proposed in the White Paper, these stranded assets would have a direct and adverse impact on the government and Kenyan taxpayers, requiring Kenya to offtake above market price electricity and either pass the costs on to the electricity consumer or cover the costs from the public purse, which would be an overall drag on the Kenyan economy and exacerbate the deep systemic challenges that contribute to exorbitant energy costs in Kenya. Additionally, as the White Paper notes, coal not only has the highest decommissioning costs, but there is also a global trend in divestment from coal.<sup>21</sup>

Any new coal generation in Kenya would expose the country to a significant risk of stranded assets with major economic repercussions for the nation.

***We strongly recommend that any recommendation for new coal generation be omitted from the White Paper to avert the significant and costly risk of stranded coal assets.***

### **Comment 2: Specific outcome No. 8 under pathway 5 is too broad and vague**

Under specific outcome no. 8, the government commits to exploring the opportunity in high potential sectors such as transport and agriculture as a pathway to decarbonizing these high carbon emitting sectors (Page 43). However, there is lack of clarity in the language of this objective regarding the specific opportunities they seek to explore, and the objective omits the other key carbon emitting sectors highlighted on page 38 of the White Paper including the energy, forestry, and industrial sectors.

We recommend the re-drafting of specific outcome no. 8, pathway 5 as follows:

“Explore policy, legal, technological and innovation opportunities for reforms to create an enabling environment to decarbonize the five key high potential sectors (energy, agriculture, forestry, transport and industrial)”.

### **Comment 3: nuclear energy should not be included in the roadmap as an alternative energy source**

The White Paper makes several references to nuclear energy as an alternative source of energy for consideration as part of a low carbon pathway. We note that while the LCPDP extensively considers nuclear power as a potential future energy source, it concludes that the cost of nuclear power at low-capacity factors makes it economically unviable given the availability of geothermal and hydro

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<sup>20</sup> IRENA (2017), “Stranded assets and renewables: how the energy transition affects the value of energy reserves, buildings and capital stock”, International Renewable Energy Agency (IRENA), Abu Dhabi, [www.irena.org/remap](http://www.irena.org/remap)

<sup>21</sup> White Paper, p.32

plants which could serve as base loads.<sup>22</sup> The LCPDP concludes that nuclear plants should only be considered if the geothermal and hydro power potential exhausted. Given existing renewable energy potential, we would submit that it is premature to include nuclear power in current discussions – particularly considering the current energy oversupply situation in Kenya.

Traditional light water reactor nuclear plants are expensive, slow to build and bring online, and generate very expensive electricity. Small Modular Reactors (SMRs) are faster to deploy but still generate expensive electricity when compared to wind and solar. The cost of solar power ranges from \$36 to \$44 per megawatt hour (MWh), the WNISR said, while onshore wind power comes in at \$29–\$56 per MWh. Nuclear energy costs between \$112 and \$189 per MWh.<sup>23</sup> Additionally, safety concerns around nuclear reactors and long-term nuclear waste management are significant and are not thoroughly addressed in the White Paper. For example, there are recent studies that suggest that SMRs might produce more voluminous and chemically and physically reactive waste than traditional reactors.<sup>24</sup> Moreover, there is the dearth of studies evaluating the operation, maintenance, and decommissioning costs of SMRs. When weighed against Kenya’s renewable potential – especially for the remote regions SMRs are contemplated which would be good candidates for solar and wind minigrids - we would argue that it is simply too premature and unnecessary to include these technologies in the nation’s energy roadmap at this time.

Moreover, there are additional cost considerations with nuclear power including the cost of running a separate entity to implement and regulate a nuclear programme which the recent Presidential Taskforce on PPAs termed “unjustifiable.”<sup>25</sup>

***We strongly urge that the White Paper recommend that there be no consideration of nuclear energy in the foreseeable future given Kenya’s abundant geothermal, wind and solar resources and the unjustifiable expense to the nation.***

#### **Comment 4: Grid decentralisation**

The White Paper acknowledges that even with the high rate of electricity access in Kenya many populations in remote areas still lack access. This reality coupled with Kenya’s current debt obligations indicates that Kenya should opt for decentralized, cost-effective energy solutions.

The White Paper rightly highlights decentralized mini-grid energy solutions particularly in rural areas as a pathway to achieve outcome 1 which aims for 100% access to electricity by 2030. Profitability at the national level is important, as stated on page 21. But equally important – and neglected in the White Paper – is a focus on how to assure that community members benefit from the mini grid projects. One approach to achieve this is via the establishment of a decentralization plan through municipal charter.<sup>26</sup>

Distributed energy generation, i.e., renewable energy generation because solar photovoltaic panels and wind turbines are scattered across residential rooftops and dispersed on acres and farmland.<sup>27</sup>

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<sup>22</sup> LCPDP 2020 – 2040, p. 92

<sup>23</sup> Reuters, ‘Nuclear Energy is too slow, too expensive to save climate – report’, <https://www.reuters.com/article/us-energy-nuclearpower-idUSKBN1W909J>

<sup>24</sup> Krall et al, Nuclear waste from small modular reactors, <https://www.pnas.org/doi/10.1073/pnas.2111833119>

<sup>25</sup> PPA Taskforce Report, p. 94

<sup>26</sup> [https://www.idos-research.de/uploads/media/DP\\_11.2017.pdf](https://www.idos-research.de/uploads/media/DP_11.2017.pdf)

<sup>27</sup> Burger, C., A., Mitchell, C. and Weinmann, J. 2020. Decentralized Energy – a Global Game Changer. Pp. 1-19. London: Ubiquity Press. DOI: <https://doi.org/10.5334/bcf.a>. License:CC-BY 4.0

is critical to provide energy access to marginalized rural and urban communities and in many cases to increase electricity generation without the need for expensive transmission grid upgrades.

### *Effective Energy governance systems are central to ensuring decarbonization*

The most cost-effective decarbonization pathway includes rapidly increasing the share of renewable electricity generation, aiming for 100% clean energy, to be able to electrify transportation and other economic sectors..<sup>28</sup> alongside significant energy efficiency measures, whether minimizing energy use in buildings through retrofit programmes or via the markets, and demand side management.<sup>29</sup> That will require not only new policies and significant changes in incentive schemes for generators and the associated grid infrastructure, but also a more encompassing transformation of governance mechanisms – policies, institutions, electricity market design and transmission network rules, among others.<sup>30</sup>

We recommend that the White Paper include recommendations on the priority policies and regulations that should be reformed, and how, to advance the energy transition most effectively.<sup>31</sup>

We would also recommend that the White Paper place greater emphasis on developing mechanisms that would promote both national and regional coordination and integration. Electricity storage (pump hydro, batteries, etc.) and interconnected grids across national and regional boundaries to create a larger balancing area for variable renewable generation such as the East African Power Pool is an important policy objective that is not sufficiently addressed in the White Paper.<sup>32</sup>

**We would therefore urge that the White Paper place much greater emphasis increasing renewable energy generation as the cornerstone of Kenya's 2040 Energy Roadmap.**

## **Comment 5: Carbon Trading will not bring about sufficient emissions reduction to address the climate emergency**

The logic of fossil fuels as a transition fuel is justified in the White Paper with the deployment of a supporting carbon credit market.<sup>33</sup> In our view, carbon markets will not be able to sufficiently incentivize the energy transition but will give dirtier, older plants the ability to continue operating to the detriment of local communities' air quality and public health, and the global climate.<sup>34</sup>

It has been observed that rather than treating pollution as a social ill that should be eliminated to the extent feasible, trading programs like those considered in the White Paper turn pollution into another

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<sup>28</sup> GEA 2012; IPCC 2015; Greenpeace 2015

<sup>29</sup> Froggatt A. and Mitchell, C. 2020. Regulatory and policy incentives – how to establish governance for decentralized energy systems? In: Burger, C., Froggatt, A., Mitchell, C. and Weinmann, J. (eds.) Decentralized energy – A Global Game Changer. Pp. 21-24. London: Ubiquity Press. DOI: <https://doi.org/10.5334/bcf.b.License>: CC-BY 4.0

<sup>30</sup> Froggatt A. and Mitchell, C. 2020. Regulatory and policy incentives – how to establish governance for decentralized energy systems? In: Burger, C., Froggatt, A., Mitchell, C. and Weinmann, J. (eds.) Decentralized energy – A Global Game Changer. Pp. 21-24. London: Ubiquity Press. DOI: <https://doi.org/10.5334/bcf.b.License>: CC-BY 4.0

<sup>31</sup> Froggatt A. and Mitchell, C. 2020. Regulatory and policy incentives – how to establish governance for decentralized energy systems? In: Burger, C., Froggatt, A., Mitchell, C. and Weinmann, J. (eds.) Decentralized energy – A Global Game Changer. Pp. 21-24. London: Ubiquity Press. DOI: <https://doi.org/10.5334/bcf.b.License>: CC-BY 4.0

<sup>32</sup> See: <https://www.irena.org/africa/Africa-Clean-Energy-Corridor>

<sup>33</sup> White Paper, pp.29 and 55

<sup>34</sup> Daniel A. Farber, 'Emissions Trading and Social Justice', Page 1, [https://escholarship.org/content/qt9z66c05g/qt9z66c05g\\_noSplash\\_7351312de6394ef36a7d4ba5294f15f0.pdf](https://escholarship.org/content/qt9z66c05g/qt9z66c05g_noSplash_7351312de6394ef36a7d4ba5294f15f0.pdf)



commodity, to be traded when economically efficiency dictates.<sup>35</sup> There are several other concerns around such programs:

*Public participation suffers:* It has been observed that existing trading programs effectively exclude the public (and to a large extent government agencies) from the decision-making process about industrial pollution.<sup>36</sup>

*The problem of gaming:* Carbon credit trading can lead to a shift of emissions to areas with poor governance structures and lax regulation and numerous examples where this has occurred exist.<sup>37</sup>

*The problem of justice:* It has been observed that global climate markets raise rather than address global questions about climate justice since they tend to benefit countries that are most industrialised (or industrialising) and not those most in need.<sup>38</sup>

For these reasons and the arguments already raised regarding the notion of transitional fossil fuels, we would urge that the White Paper omit this as part of its recommendations.

### **Comment 8: Need to address enabling policy and legal reforms beyond the energy sector to facilitate a just transition**

We would recommend that the White Paper consider and address policy and legal reforms beyond the energy sector that are fundamental to securing a just energy transition for Kenya.

Based on our experience we would particularly propose that the White Paper address the following two areas:

#### *Free Prior and Informed Consent (FPIC)*

There is a need to strengthen legal provisions on free prior and informed consent and resettlement action plans where compulsory land acquisition is necessary for project development. Since 2019, for instance, communities and other civil society organizations continue raising concerns around the implications of the Land Value (Amendment) Act which amended Section 22 of the Prevention, Protection and Assistance to Internally Displaced Persons and Affected Communities Act, 2012 by deleting the provisions on Free Prior and Informed Consent (FPIC) where displacement is induced by development projects. Equally concerning is the fact that, in this Act, unlike in the previous regime, “prompt” payment of compensation is construed to mean payment of compensation not more than one year after the taking of possession of the land by the National Land Commission. This will particularly affect communities whose ancestral lands are acquired and therefore need to be resettled immediately after the government takes possession of their land failing which their cultural, economic, and social rights stand threatened.

#### *Human Rights Impact Assessments*

While Kenya has a long history of implementing environmental impact assessments for projects with potential significant environmental impacts, less accounted for in these processes have been implications on human rights. We would therefore propose that the White Paper also include

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<sup>35</sup> Page 270, Los Angeles’ Failed experiment

<sup>36</sup> Richard Toshiyuki D Rury, Michael E. Belliveau, J. Scott Khun & Shipra Bansal, 'Pollution and Trading and Environmental Injustice: Los Angeles’ failed experiment in air quality policy,' Duke Environmental Law & Policy ForumP, Page 278

<sup>37</sup> Sovacool, Benjamin K (2011) Four problems with global carbon markets: a critical review. Energy and Environment, 22 (6). pp. 688. ISSN 0958-305X

<sup>38</sup> Sovacool, Benjamin K (2011) Four problems with global carbon markets: a critical review. Energy and Environment, 22 (6). pp. 686. ISSN 0958-305X

proposals for the inclusion of Human Rights Impact Assessments as part of the environmental and social impact assessments for energy projects. In our view, such proposals would work hand-in-glove with emerging business and human rights principles.

## Conclusion

We strongly urge that the White Paper place focus on increasing renewable energy generation, energy efficiency, storage, and regional grid integration as the cornerstone of Kenya's 2040 Energy Roadmap. In parallel, we are deeply concerned to see proposals for any new coal fired generation, and strongly urge that they be deleted from the draft energy roadmap. Finally, we urge the White Paper to fully analyze the economics of gas versus clean energy, and the potential harm to the Kenyan economy and electricity consumers of building new gas plants that are likely to become stranded assets.