Transitions Pathways and Risk Analysis for Climate Change Mitigation and Adaptation Strategies

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TRANSITION PATHWAYS AND RISK ANALYSIS FOR CLIMATE CHANGE POLICIES

Clearing the Smoke: Capacity building for energy planning processes and policy development in the Charcoal and Geothermal Sector

Mbeo Ogeya, Mbeo.Ogeya@sei.org

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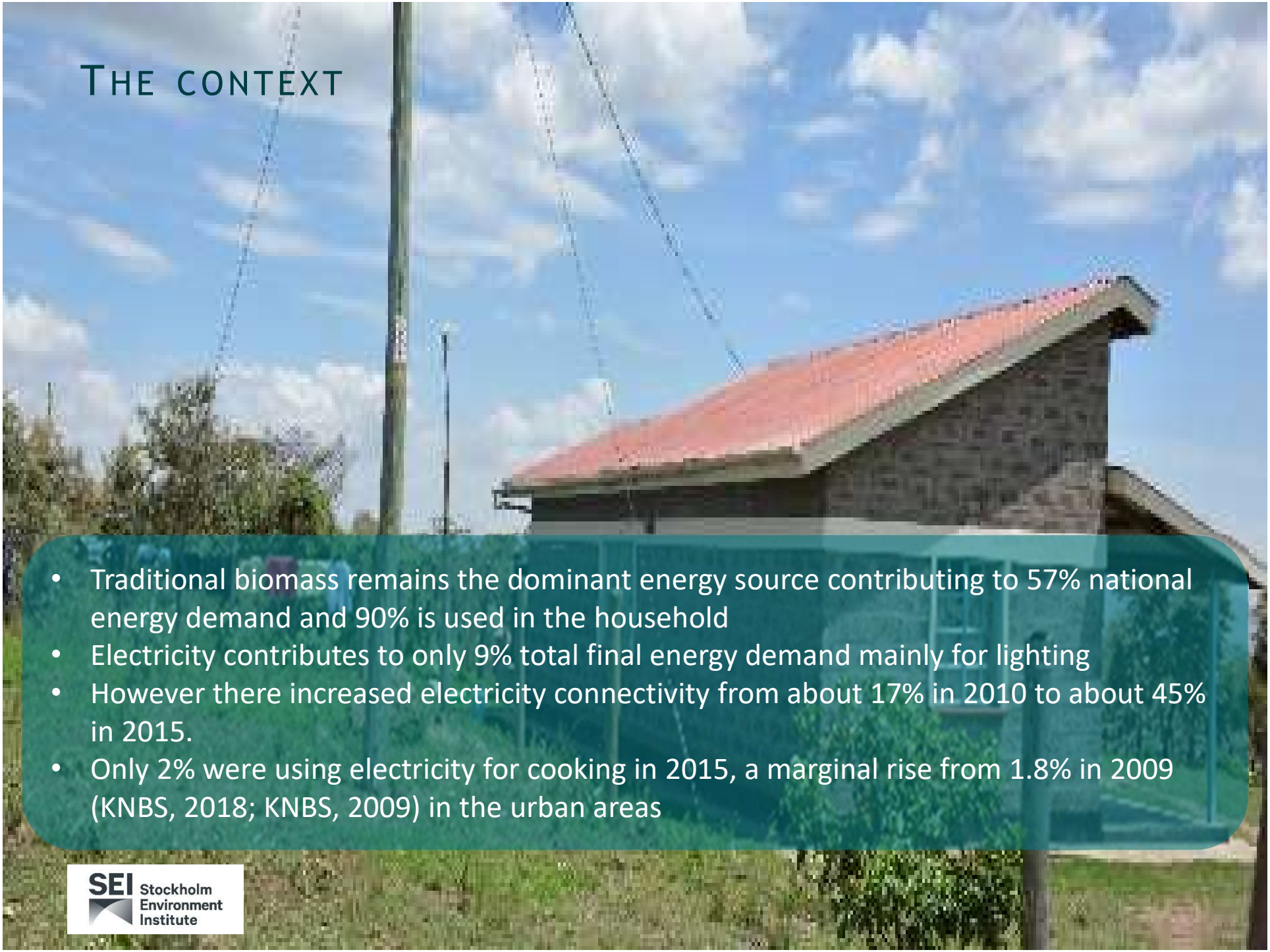
THE CONTEXT



- Traditional biomass remains the dominant energy source contributing to 57% national energy demand and 90% is used in the household
- Electricity contributes to only 9% total final energy demand mainly for lighting
- However there increased electricity connectivity from about 17% in 2010 to about 45% in 2015.
- Only 2% were using electricity for cooking in 2015, a marginal rise from 1.8% in 2009 (KNBS, 2018; KNBS, 2009) in the urban areas

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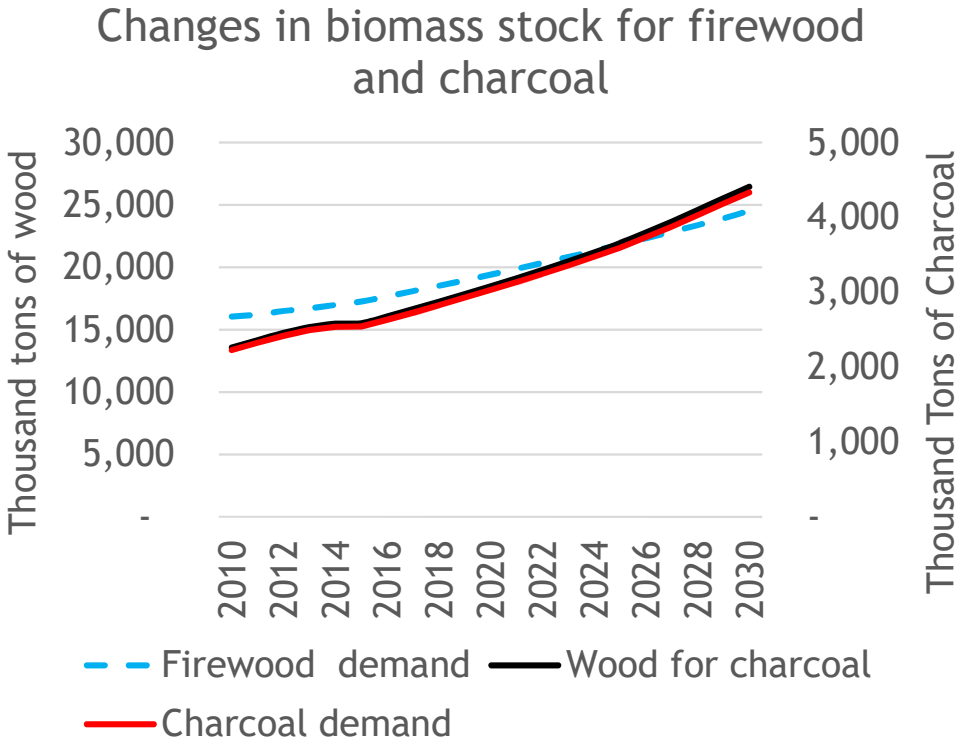
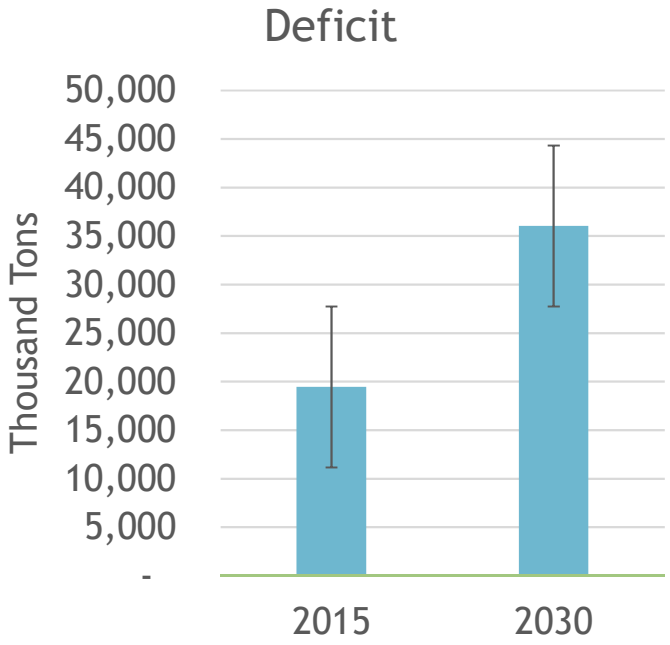
What quantity of Wood and Charcoal do we use?

- Demand is expected to grow from 3.3 million ton in 2013 to 4.3million ton in 2030 in the BAU scenario.





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How much are we losing?

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6.25 tons

Traditional kiln 16% conversion efficiency

1 ton

Kenya Ceramic Jiko 25% conversion efficient

Effective charcoal 0.25 ton

6 tons ≈ 96% of wood harvested

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How much more will we pay to Transition to electricity?

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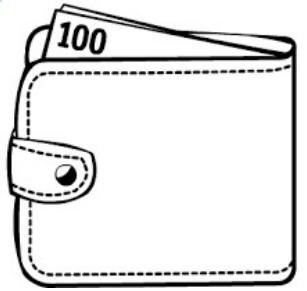
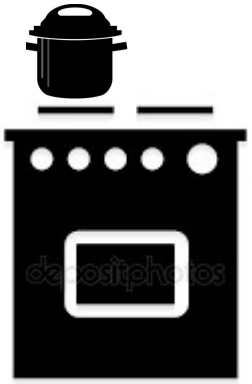
1kg charcoal = 1 tin charcoal

29MJ



KES 100

Electricity



8kWh

KES 120

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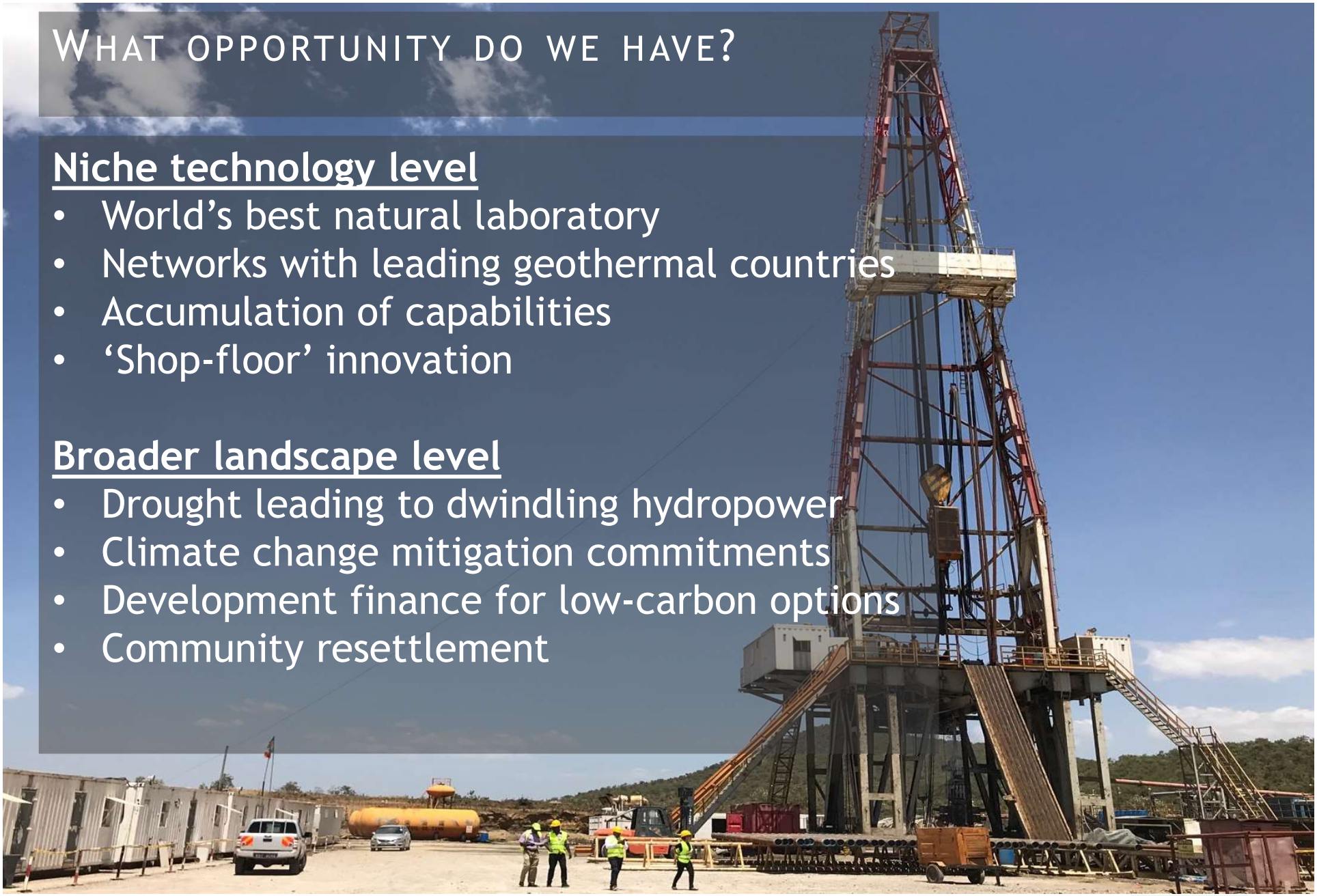
What opportunity do we have?



Niche technology level

- World's best natural laboratory
- Networks with leading geothermal countries
- Accumulation of capabilities
- 'Shop-floor' innovation

Broader landscape level

- Drought leading to dwindling hydropower
- Climate change mitigation commitments
- Development finance for low-carbon options
- Community resettlement

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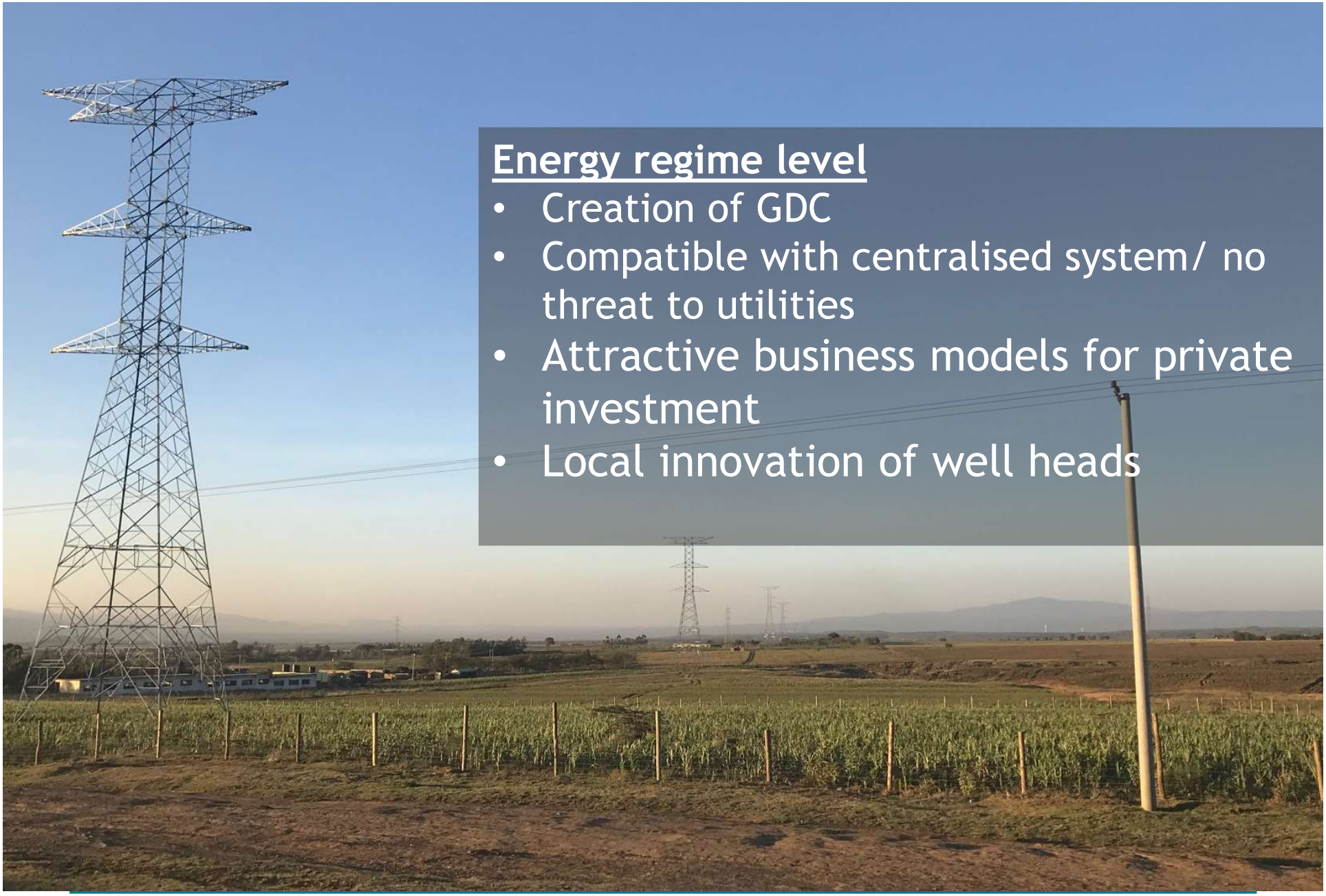

Energy regime level

- Creation of GDC
- Compatible with centralised system/ no threat to utilities
- Attractive business models for private investment
- Local innovation of well heads

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WHAT THEN?

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Capacity building for energy transition

.....Desired

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CAPACITY BUILDING PROCESS

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Capacity building for policy

Capacity building for technological advancement

Capacity building for community

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CAPACITY BUILDING FOR POLICY

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- Evidence based policy making and policy coherency in all sectors. The forestry, energy and agricultural sectors
- Rapid drafting, review, implementation of policy documents (e.g. draft energy policy is 6 years over due, draft energy bill etc.)
- Institutional alignments and mandates, the act of dialogue in development (e.g. the role of the national government verses the county government)
- Incentive, tradeoffs and synergies supported policies (e.g. tax holidays, import duties, concession letters)

CAPACITY FOR TECHNOLOGICAL ADVANCEMENT

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- Human capacity – Over 300 staff on-job formal training
- Strategic Collaboration with more experienced geothermal centers such as UNU-GTP Iceland, Kyushu – Japan etc.
- Localized training – UN Environment/KENGEN short courses, MSc. Program at JKUAT and Kimathi University
- Specialized training policy – 1 course per staff
- Local innovation – Well heads

Capacity building for communities

- Awareness on alternative sources of energy and forest destruction
- Community support with social amenities and economic opportunities
- Advancing knowledge on alternative livelihoods
- Benefit sharing and co-ownership

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Some Negative outcomes to be managed

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Environment

- Resources situated in protected areas
- Disruption of migratory routes
- Noise pollution

Political

- Governance (National/County government)
- Political regime manifestos
- Delays in bills and policies due to partisan interests

Social risk

- Community migration
- Negative livelihood impact

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POLICY RECOMMENDATION

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- Ensure clarity on roles, risk-taking and regulation of GDC, KenGen, private sector and financiers
- Increased efforts to catalyze industrial demand at generation sites to reduce transmission cost and losses
- Greater social science-focused research on how to manage social, political and economic issues
- Coordinated efforts to strengthen the capacity of the implementing entities and charcoal producer associations, and to ensure that the enforcing agencies speak to each other in order to address any concerns that may be raised by the market chain actors

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THANKS!
ASANTE SANA!
TACK!

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Project team:

1. Francis Johnson: francis.johnson@sei.org
2. Oliver Johnson: Oliver.johnson@sei.org
3. Mbeo Ogeya: mbeo.Ogeya@sei.org
4. Hannah Wanjiru: Hannah.Wanjiru@sei.org
5. Richard Taylor: Richard.taylor@sei.org

Project Website: www.transrisk-project.eu

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