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Integrating county energy plans into Kenya's Integrated National Energy Plan (INEP) process

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Key Recommendations

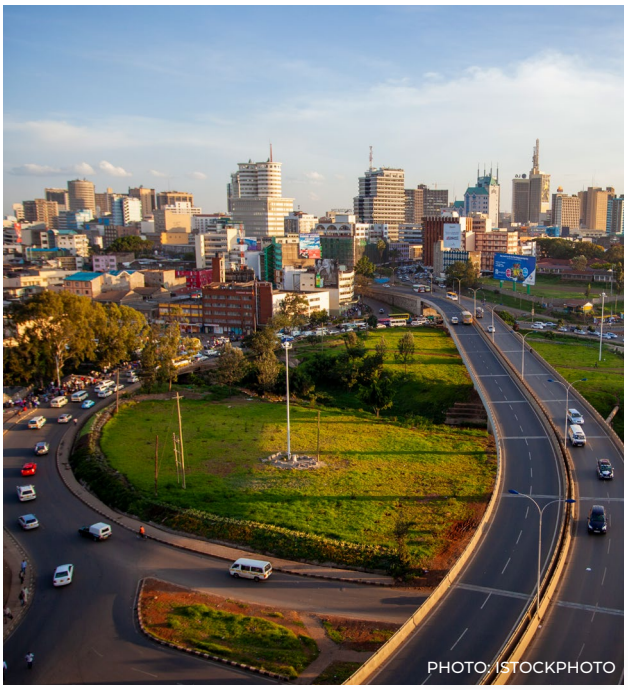
These are the key recommendations that emerge from ERI/UCL research on the integration of county energy plans into Kenya's Integrated National Energy Plan (INEP) process:

I. **Enhance coordination between counties and national planners:** Integration of county and national planning through improved technical coordination between the county planners and the five national technical committees developing the Integrated National Energy Plan, to ensure that both scales are accounted for in respective plans. This could include establishing a county–national technical working group on energy data and planning.

II. **Develop and adopt minimum data guidelines (MDGs):** Adoption of MDGs to ensure critical data required under the INEP and across its technical committees is extracted from County Energy Plans (CEPs) for use in planning. Where county data gaps exist, default data sets could be developed as a stopgap arrangement to ensure uninterrupted planning progress.

III. **Establish a centralised county energy data repository:** A national or shared platform based on MDGs in (II) to store and manage county-level energy datasets to ensure data remains accessible, secure, and usable, regardless of staff turnover. Guidelines for the development of such a shared platform are included in this policy brief. This resource will be an important basis for coordination under (I), and a means of sharing information between counties.

IV. **Strengthen integrated planning via multi-scale modelling:** The CORE-WESM model is proposed as a basis for national energy planning that accounts for county characteristics and priorities while maintaining the national-level analysis scale. Such a model could be a key tool to support coordination under (I), but adoption would require strong capacity building efforts across county and national planning staff.



Road networks – Nairobi, Kenya

1. Introduction

As set out under the Constitution of Kenya (2010) and the Energy Act (2019), Kenya's energy planning framework requires national and county governments to coordinate on energy planning. This is being formalised through the Integrated National Energy Plan (INEP), an energy planning framework developed by the Ministry of Energy and Petroleum (MoEP). It is designed to integrate planning across all energy sectors (electricity, energy access, bioenergy, energy efficiency, energy resources), but also across scales, incorporating information from County Energy Plans (CEPs) [1].

Under the INEP Regulations 2025, the MoEP issued a circular [2] providing further guidance to counties to prepare and update CEPs in consultation with national agencies and energy service providers, ensuring alignment with national policies, infrastructure plans, and regulatory requirements. The regulations also establish County Energy Planning Committees to oversee preparation, monitoring, reporting, and periodic review of CEPs [3].

However, to date progress in CEP development has been uneven. While a number of counties have started developing plans, only a small number have formally launched their plans, with others remaining at draft stages. This variation in progress, driven by limited data availability and planning capacity at the county level, among other factors, highlights ongoing challenges in integrating county planning into the INEP process. Plans also vary in terms of planning approach and data availability.

These challenges, documented in earlier CCG-funded research by EED Advisory [4], underline the need for improved data collection and data sharing mechanisms, and better coordination between governance scales to effectively integrate county-level data and planning into national energy planning frameworks, thereby advancing Kenya's broader energy access and development goals.

A CCG project launched in response to these challenges explored practical approaches to integrating county planning efforts into national planning, as required by the INEP process [5]. The project progressed across two inter-related activities aimed at supporting county and national policymakers and planners: (i) the development of minimum data guidelines and a data platform that focuses on relevant data collection for national planning (Section 2), and (ii) the development of a multi-scale model, CORE-WESM, that enables joint assessment of both planning scales (Section 3).

2. Minimum Data Guidelines (MDGs) and data platform

For CEPs to feed into the national energy planning process as envisaged under INEP, a structured and harmonised data framework is needed to ensure consistency, comparability, and integration. For this, we propose minimum data guidelines (MDGs), which define the essential data to be reported. The MDGs target data that is critical for national energy planning and modelling frameworks, such as CORE-WESM (see Section 3) as opposed to capturing all data in CEPs.

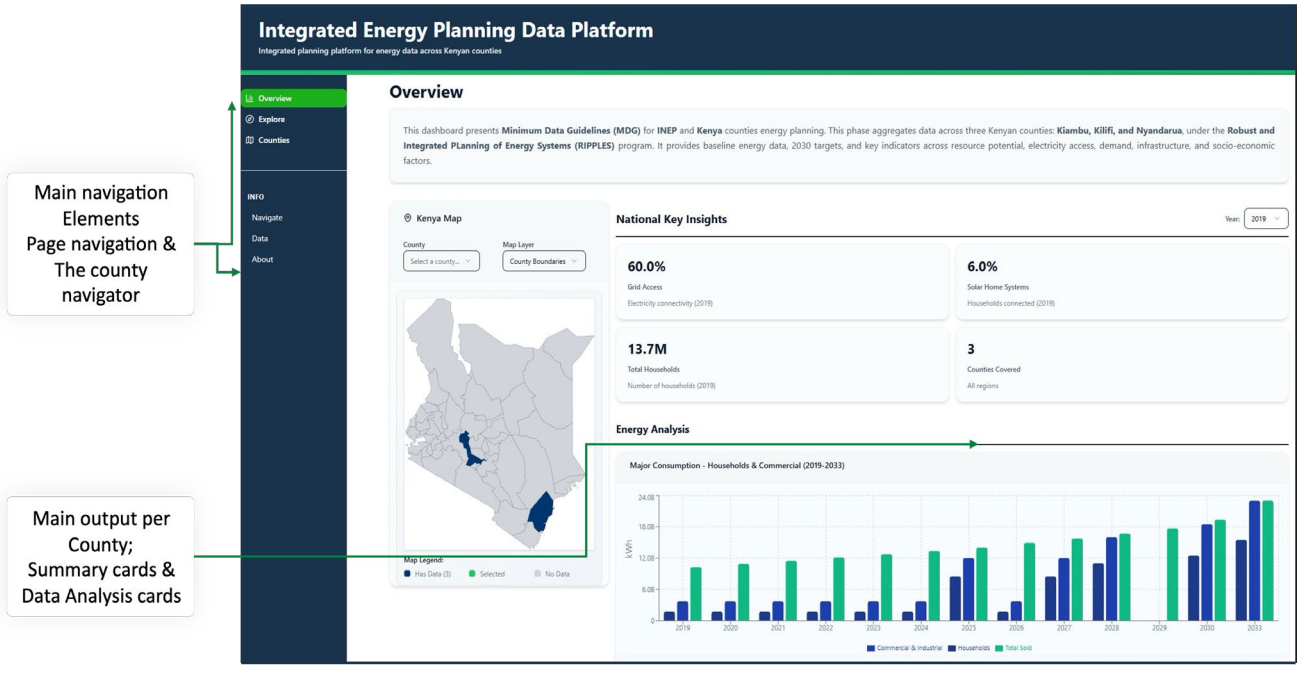
The proposed guidelines comply with data requirements outlined in the 2025 Draft INEP under four thematic areas: (i) energy resource potential, (ii) energy demand and

consumption, (iii) infrastructure and access, and (iv) socio-economic and geospatial context. The MDG template sets out the full data requirements while a data survey form is used for data collection. Each requested dataset is described by standardised metadata elements to ensure traceability and interoperability. In addition, the MDG adopts INEP data taxonomy and associated principles of inclusivity, interoperability, and decentralisation.

Targeted county engagements have been undertaken to ground these proposed data requirements in practical realities. A set of visits, coordinated in collaboration with the Council of Governors, were made to the pilot counties of Kiambu, Nyandarua, and Kilifi, all of which have produced CEPs. These engagements focused on assessing county energy data availability, existing coordination mechanisms, and priority planning needs associated with INEP-aligned reporting and CEP development. The visits highlighted a strong understanding of CEP requirements, technical capacity, and coordination across the county administrations, and access to a range of locally held data. Two key challenges were flagged; firstly, information related to households, SMEs, and industry was often hard to collect. Secondly, the need for improved transparency and data sharing, as evidenced by insufficient coordination between county offices of state agencies as well as of the electricity utility and county administrations.

Alongside the MDGs, a prototype County Energy Data Platform was developed to operationalise the data framework, serving as a proof of concept of how MDG-aligned data can be collated and presented to support integrated county and national planning (**Figure 1**). It also serves as a platform for counties to compare and benchmark their own energy data and plans. The platform currently includes data for the three pilot counties focusing on key energy indicators, but has been set up to manage data from all 47 counties.

***Figure 1:** Data platform landing page, providing a user-friendly interface to access and explore national and county-level energy data.*



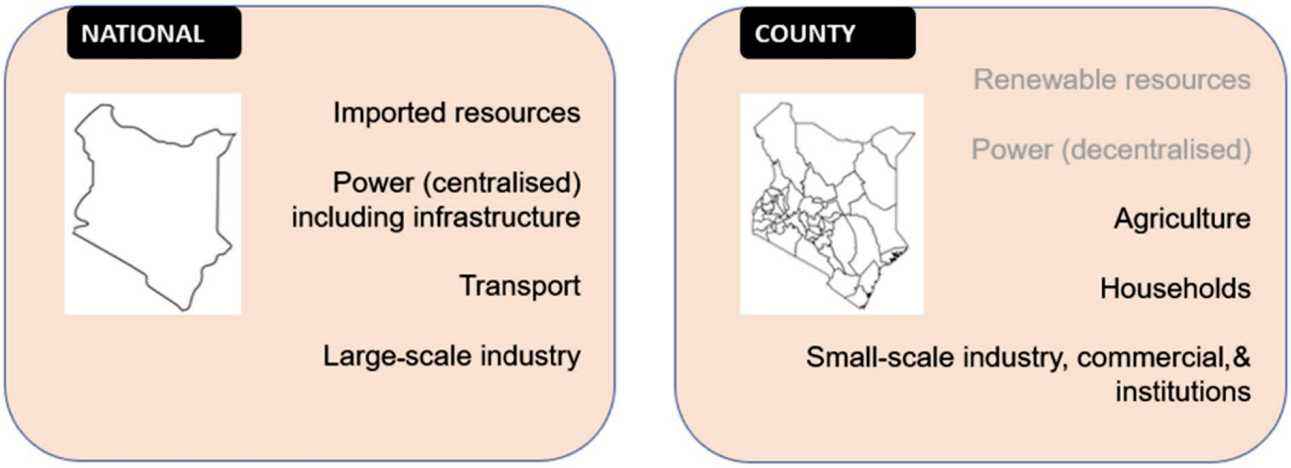
3. Multi-scale modelling using CORE-WESM

Data will be key to operationalising the INEP, though integrating county and national-level planning remains a challenge. Scenario modelling, an approach that national planners have been using for many years – for example, by the LCPDP (Least Cost Power Development Plan) team – could be one approach. The INEP development will be led by the INEP National Committee, collating information from five technical committees and CEPs. Access to an analytical framework to support that process through joint analysis and dialogue across committees and county planners could be beneficial.

The COunty-REsolved Whole Energy System Model (CORE-WESM) [6] is one such model being developed which allows for a closer integration of county and national planning. CORE-WESM is a spatially disaggregated version of the OSeMOSYS-Kenya model[1] that explicitly represents each of Kenya's 47 counties (**Figure 2**). Originally developed under a UK PACT-funded project, the model provides an integrated modelling framework that allows for energy system characteristics, targets, and other priorities of counties to be explicitly represented while at the same time providing national-level outputs. When populated, the MDG and Data Platform will provide a significant proportion of the model's data needs.

[1] The Kenya OSeMOSYS WESM model can be found at [7]. An example of the model application can be found at [8]

Figure 2: Sectoral structure and spatial resolution of CORE-WESM. *Some sectors are modelled at the national level, notably because they are typically outside of the scope of the CEPs. Sectors that would fit under but are not yet modelled at the county level are greyed out.*



Key benefits of this modelling approach include:

- Scope for cross-sectoral analysis of planning priorities across national technical committees, given the overlaps between planning areas, and ensuring consistency of planning assumptions.
- Combined analysis of national and county energy planning priorities and targets, in turn facilitating a common understanding and dialogue between committees and planners working at different governance scales.

4. Conclusions

The INEP process remains an innovative approach to planning, recognising the need for integration across sector and governance scales in order to meet Kenya's energy policy objectives. In many senses, it aims to further democratise the planning process through increased devolution to counties. Nonetheless, , challenges remain, notably around multi-sector integration and integration of county–national scales.

This brief makes a contribution towards the operationalisation of the INEP by proposing solutions for improved data collation towards better integration of county-level information into national planning, and proposing ways in which modelling can enable integration of planning analysis across INEP technical committees and between national and county planning scales.

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