ETHIOPIA COUNTRY ASSESSMENT REPORT

Version: 1

Release Date: Nov 2025

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1.1 Country Overview

Country Name	**ETHIOPIA**
Introduction	With over 128 million residents as of 2025, Ethiopia is the second most populous nation in Africa and one of the fastest-growing economies in the region, with an estimated real GDP growth averaging 7.9% in FY2024/25. The country's economy is mainly based on agriculture, but it has seen robust growth in manufacturing and services over the past decade. As part of the country's commitment to universal energy access, electricity access reached approximately 65% of the population by 2025, which represents basic electrical access. The World Bank Multi-Tier Framework for Measuring Energy Access (MTFS) data indicates that 44% of the population has achieved Tier 1 access, which reflects higher standards of reliability and capacity. Urban areas have achieved near-universal access, with continued off-grid deployment expanding coverage in rural zones.

1.2 Electrical Generation and Demand

Electricity Generation

Technology	Installed Capacity (MW)	Share of Total (%)
Hydropower	5,268	91.0%
Wind Power	405	7.0%
Solar PV	100	1.7%
Geothermal	7	0.1%
Thermal (Diesel/HFO)	6	0.1%
TOTAL (Grid-Connected)	**5,786**	**100%**

Electricity Demand and Consumption (2025)

Sector	Consumption (GWh/year)	Share of Total (%)
Residential	6,440	46%
Industrial	4,200	30%
Commercial & Services	2,520	18%
Public/Government	560	4%
Agricultural	280	2%
Total Domestic Demand	**14,000**	**100%**
Exports	**1,200-1,500**	

Sources: (Ministry of Water & Energy, Ethiopian Electric Company, IEA, 2024)

Ethiopia has reached a major milestone in renewable energy development, with 99.8% of electricity supplied to the National Electricity Grid generated from renewable sources.

As of 2025, Ethiopia's installed electricity generation capacity stands at approximately 5,786 MW, dominated by hydropower. A substantial share of recent capacity additions has come from large-scale projects, most notably the Grand Ethiopian Renaissance Dam (GERD). GERD currently generates 2,350 MW, representing around 40% of national installed capacity and roughly half of its planned full capacity of 5,150 MW.

Demand Drivers and Projections

Electricity demand in Ethiopia is increasing at a rate of 30-35% annually, driven primarily by industrialization and economic growth. The most significant expected increase is projected to come from the industrial sector, with an estimated average annual growth of 11.6% from 2012 to 2030 (rising from 4400GWh in 2013 to a projected 31400GWh in 2030).

Key demand drivers include:

- **Industrial Parks:** Over 20 industrial parks requiring more than 2,500 MW collectively
- **Electric Railway:** National railway network covering 4,744 kilometers
- **Mining and Manufacturing:** Expanding cement, textiles, and agro-processing sectors
- **Urbanization:** Rapid urban population growth increasing residential and commercial demand
- **Regional Exports:** Growing electricity trade with Kenya, Djibouti, Sudan, and future connections.

1.3 Electrical Interconnection and Import/Export

Additional information

Ethiopia is increasingly integrated into regional power trade through multiple high-voltage interconnections, exporting surplus hydropower and supporting the development of the Eastern Africa Power Pool (EAPP) market.

Country	Voltage & Type	Line Length	Transfer Capacity	Status	Commissioning Year
Kenya	500 kV HVDC Bipolar	1,045 km (433 km in Ethiopia, 612 km in Kenya)	2,000 MW	Operational	2022/2023
Djibouti (Line 1)	230 kV AC	283-296 km	~150 MW	Operational	2011
Djibouti (Line 2)	230 kV AC Double-Circuit	292 km	320 MW (160 MW per circuit)	Under Construction	Expected 2025-2026
Sudan	230 kV AC Double-Circuit	194 km (Metema–Gedarif)	~200 MW	Operational	2010s
Tanzania	Via Kenya (Wheeling)	-	100-200 MW	Trial Phase	2024-2025

Sources: (Institute for Foreign Affairs, EPRA, 2025)

Kenya Interconnection

The 500 kV HVDC Ethiopia–Kenya electricity highway was completed in 2022 and commenced operations in 2023. Kenya now imports around 200 MW daily from Ethiopia. Wheeling tests conducted in June 2025 successfully transmitted 50 MW from Ethiopia through Kenya to Tanzania, marking a significant step toward routine Ethiopia–Tanzania power transfers and the eventual linkage between the Eastern Africa Power Pool (EAPP) and Southern African Power Pool (SAPP).

Djibouti Interconnection

The existing AC link connecting Djibouti and Ethiopia has a current capacity of approximately 150 MW. This connection will be supplemented by a second 230 kV double-circuit line currently under implementation. This addition will provide a rated transfer capacity of 160 MW per circuit, materially increasing the total transfer capability upon completion to approximately 470 MW.

Other Regional Interconnections

A 200 MW AC tie line with Sudan facilitates variable exports although volumes have been lower recently compared to those with Kenya and Djibouti, due to the ongoing civil conflict and damaged infrastructure but the connection remains active. New interconnections are planned with:

- Eritrea (42 MW)
- Somalia (51 MW)
- Somaliland (7 MW)
- Yemen (240 MW)

These planned interconnections will further enhance Ethiopia's capacity to balance power generation and supply within the region and support the development of a robust regional electricity market.

Electricity Export Performance (2024/25 Ethiopian Fiscal Year)

Destination	Annual Export Volume (GWh)	Export Revenue (USD Million)	Average Export Capacity (MW)	Share of Total Exports
Kenya	~1,460	$86.3	200 (contractual); expanding to 400 MW in 2026	73%
Djibouti	~550-650	$30.9	75-90	26%
Sudan	~27-53	$0.9	10-20 (reduced from ~100 MW)	<1%
Tanzania	Pilot volumes	Minimal	50-100 (trial wheeling)	<1%
TOTAL	~2,040-2,190	$118.1	285-410 MW average	100%

Source: Institute for Foreign Affairs, 2025

Import Profile

Ethiopia is primarily an electricity exporter and does not routinely import electricity from neighbouring countries. However, the Ethiopia-Kenya HVDC line is designed for bidirectional flow (2,000 MW capacity in either direction) to provide grid stability and backup supply during:

- Extreme drought conditions affecting hydropower production
- Transmission or generation outages
- Peak demand periods

1.4 Market Structure

Overview of the National Electricity Market
Ethiopia's electricity market operates under a vertically unbundled but state-dominated model that is gradually transitioning toward greater private sector participation and market liberalization. The sector is governed by Energy Proclamation No. 810/2013 (as amended by Proclamation No. 1085/2018) and Energy Regulation No. 447/2019, which establish the regulatory framework for the generation, transmission, and distribution of energy from both on-grid and off-grid sources.

Market Model and Structure
Current Market Type: Single Buyer Model
- Transmission and distribution through the integrated national grid remain state monopolies
- Generation is partially liberalized, open to Independent Power Producers (IPPs) through competitive tenders
- All grid-connected electricity must be sold to Ethiopian Electric Power (EEP) under Power Purchase Agreements (PPAs)
- No wholesale electricity market or competitive retail market currently exists

Planned Evolution: Transition toward competitive power market by 2030, with market-based pricing and direct sales by IPPs.

Key Market Participants and Their Roles
1. Generators
State-Owned Generation:
  - Ethiopian Electric Power (EEP): Owns and operates the majority of existing generation assets, including the large hydropower plants (GERD, Gibe III, Fincha, Tekeze, etc.), existing wind farms (Ashegoda, Adama I & II, Aysha), small/medium hydropower facilities and limited thermal backup generation.
- Total State Capacity: Approximately 5,500-5,700 MW (95%+ of installed capacity as of 2025)
- Future Role: EEP will focus on operating and maintaining existing plants rather than developing new generation projects

Private Sector Generators (IPPs):
- Current Status: Limited operational capacity; most IPP projects are in development or tender phase.
- IPP Challenges: Despite PPAs being signed, none of the large-scale IPP projects have become operational as of 2024-2025.

Off-Grid/Mini-Grid Developers:
- Humanitarian Energy (HumEn) - Mercy Corps subsidiary
- Various private mini-grid operators under Mini-Grid Directive No. 268/2020
- Community-based renewable energy cooperatives

2. Transmission Network Owner/Operator
Ethiopian Electric Power (EEP):
- Dual Role: Generation and transmission (unbundling under consideration)
- Transmission Assets: Over 17,000 km of transmission lines (including high-voltage interconnections)
- Voltage Levels: 500 kV HVDC (Kenya), 400 kV, 230 kV, 132 kV
- Third-Party Access: Energy Proclamation mandates non-discriminatory grid access

for licensed generators with prescribed connection fees
- EEP performs dispatch, balancing, and system control

Future Reform: Government is considering further unbundling EEP by separating transmission from generation to ensure equal access for IPPs to the grid.

3. Distribution and Retail

Ethiopian Electric Utility (EEU):
- Sole Distribution Company: Purchases bulk power from EEP and sells to end-use customers nationwide
- Service Territory: All grid-connected areas in Ethiopia (urban and rural)
- Customer Base: Residential, commercial, industrial, government, and agricultural consumers
- Distribution Network: Low and medium voltage distribution infrastructure
- Retail Functions: Metering, billing, collection, customer service
- Off-Grid Role: Limited; off-grid distribution primarily handled by private mini-grid operators under license.

4. Regulatory Authority

Ethiopian Petroleum and Energy Authority (PEA):
- Successor to Ethiopian Energy Authority (EEA), created under Energy Proclamation 810/2013
- Core Functions:
    - Licensing generation, transmission, distribution, and supply activities
    - Tariff regulation and approval (using cost-of-service methodology)
    - Technical standards and grid code enforcement
    - Monitoring compliance and performance
    - Dispute resolution
    - Issuing regulatory directives (including Mini-Grid Directive No. 268/2020)

5. Policy and Strategic Direction

Ministry of Water and Energy (MoWE):
- Overall policy formulation and sector planning
- Oversight of EEP, EEU, and PEA
- Management of Rural Electrification Fund
- Coordination with Ministry of Finance on PPP/IPP projects

Ministry of Finance - PPP Directorate General:
- Administration of all IPP and PPP procurement processes
- Tender design and evaluation
- Contract negotiation support
- Financial structuring and government guarantee.

Electricity Trading and Contracting Mechanisms

Grid-Connected Generation

1. Power Purchase Agreements (PPAs):
- Structure: Long-term bilateral contracts between generators and EEP (single buyer)
- Typical Terms: 20-25 years
- Renewable Attributes: Typically, not explicitly addressed in PPA terms; attributes generally remain with generator unless transferred

2. Government Guarantees and Implementation Agreements (IAs):
- Separate from PPAs; signed between IPPs, EEP, and Government of Ethiopia
- Provide guarantees for:

    - Payment obligations in case of EEP default
    - Tax holidays and customs duty exemptions
    - Foreign currency availability and convertibility
    - Force majeure protections
- Though no clear legal requirement exists for IAs, they provide critical investment protection for IPPs.

<u>Distribution and Retail</u>
EEU Bulk Purchase from EEP:
- Wholesale electricity purchase under internal government arrangements
- Cost-plus pricing intended to recover EEP's generation and transmission costs
- Not structured as competitive procurement

End-User Tariffs (Retail):
- Set by PEA based on Tariff-Setting Methodology Directive (2020)
- Progressive tariff structure with lifeline rates for low-consumption households
- Tariff Reform (2024-2028): Phased increases toward cost-reflectivity; critical for utility financial sustainability

<u>Regional Power Trade</u>
Export Contracts:
- Bilateral PPAs between EEP and national utilities in importing countries listed under section 1.3 above.

<u>Off-Grid and Mini-Grid Installations</u>
Mini-Grid Licensing and Tariffs:
- Regulated under Mini-Grid Directive No. 268/2020
- Private mini-grid operators licensed by PEA
- Tariff-setting flexibility with regulatory approval
- No mandatory purchase obligations from EEU for mini-grid power

Market Reform Roadmap (2025-2030)
Ethiopia is transitioning toward a competitive electricity market model with plans for full market liberalization by 2030. The Eastern Africa Power Pool (EAPP) is expected to become operational in 2025, facilitating regional electricity trade and market integration.

Environmental Attribute Products and Certificate Systems
I-REC(E) Standard (Primary System)
Ethiopia has been approved as an I-REC(E) country since December 2022, with Energy Peace Partners (EPP) serving as the authorized issuer for both standard I-REC(E) certificates and Peace Renewable Energy Credits (P-RECs).

Operational Track Record:
- P-RECs have been issued from projects in Ethiopia since 2022, primarily from an off-grid mini-grid solar project owned by Humanitarian Energy (HumEn) within a refugee camp setting. Total issuance volumes remain modest but growing.
- No regulatory barriers or government opposition encountered to date
- Government letter of support issued to EPP in 2022

Other Certificate Systems: None
- No State-Operated Certificate System: Ethiopia does not have a government-run renewable energy certificate registry or tracking system
- No Renewable Portfolio Standard (RPS): No mandatory renewable energy purchase

obligations for utilities or consumers
- No Feed-in Tariffs: Not implemented; IPP procurement through competitive tenders only
- No Carbon Pricing: No domestic carbon tax or emissions trading scheme
- No Renewable Energy Subsidies: Generation subsidies not provided; tariff-based revenue only
- No Green Tariff Programs: Retail customers cannot currently opt for premium renewable electricity rates

Implications for I-REC(E):
- I-REC(E) operates in a clear field with no competing domestic certificate systems
- No risk of double-counting with other environmental attribute tracking mechanisms
- Voluntary market only; no compliance obligations driving domestic certificate demand
- Market development depends on international demand and corporate sustainability commitments

Market Outlook and Implications for I-REC(E)
Growth Drivers:
1. Massive Capacity Expansion: 14,000-17,100 MW target by 2030 (140%+ growth)
2. IPP Acceleration: All new generation through the private sector; creates demand for environmental attribute monetization
3. Regional Export Growth: Electricity exports are expected to double by 2030; cross-border attribute tracking needs will grow.
4. Corporate Sustainability: Growing international corporate presence in industrial parks; potential domestic I-REC(E) demand
5. Development Finance: I-REC(E)/P-REC appeal to impact investors and development finance institutions.

In summary, the Ethiopian electricity market is at an inflection point, transitioning from state dominance toward private sector participation and eventual competitive market operations. This transformation, combined with Ethiopia's exceptional renewable energy resources and the established I-REC(E) certification system, creates a favorable environment for voluntary renewable energy attribute tracking to support both domestic development objectives and international climate commitments.

1.5 Responsible Government Department

This section provides a comprehensive overview of the government ministries, departments, and regulatory bodies with authority over Ethiopia's electricity sector, renewable energy policy, and environmental regulation, including their specific roles in oversight, support, and regulation of electricity markets and environmental attribute tracking systems.

1. Ministry of Water and Energy (MoWE)
Organizational Status: Federal government ministry established in 2010

Core Mandate and Functions
MoWE serves as the apex policy-making body for Ethiopia's water and energy sectors with the following primary responsibilities:
- Policy and Strategic Planning
- Legislative and Regulatory Framework
- Resource Management

- Sector Coordination and Oversight
- International Engagement
- Research and Technical Support

Role in I-REC(E) Certification
Policy Support: MoWE provided a letter of support in 2022 for the introduction of renewable energy certificates in Ethiopia to Energy Peace Partners, demonstrating government awareness and endorsement of voluntary attribute tracking mechanisms.
Coordination Function: MoWE serves as the coordinating body for energy sector initiatives and facilitates engagement between international certification bodies and Ethiopian implementing agencies.
Strategic Alignment: I-REC(E) implementation aligns with MoWE's objectives to promote renewable energy development, attract private investment, and enhance the value proposition of renewable energy projects.

2. Ethiopian Electric Power (EEP)
The Ethiopian Electric Power is responsible for generation and transmission, currently owning most of the existing power plants and transmission infrastructure in Ethiopia. EEP also holds the authority to lease transmission lines and sell bulk electric power to distributors and large consumers.

3. Ethiopian Electric Utility (EEU)
The Ethiopian Electric Utility is responsible for distribution infrastructure in the country, purchasing electricity from EEP to distribute and sell to retail consumers nationwide.

4. Ethiopian Petroleum and Energy Authority (PEA)
The Ethiopian Petroleum and Energy Authority is the primary regulatory body responsible for regulating the power and petroleum sectors.

All three agencies (EEP, EEU, and PEA) report to the Ministry of Water and Energy. The Ministry also manages the Rural Electrification Fund, which supports expansion of electricity access to underserved areas.

1.6 Existing/Planned Legislation

Core Legal Framework
Ethiopia's modern energy sector legal framework is anchored by the Energy Proclamation No. 810/2013, which created the Ethiopian Energy Authority (now PEA) to license market participants, regulate tariffs, and issue technical directives. The proclamation was amended in 2018 (Proclamation No. 1085/2018) to refine institutional powers and better align with private sector participation objectives. These legislative instruments establish the foundation for today's licensing and metering rules that underpin auditable generation data essential for I-REC(E) certification.

National Energy Policy and Planning
The National Energy Policy, revised in 2018 and expected to be updated for the 2025–2034 planning cycle, prioritizes:

- Expanding electricity access to underserved populations
- Diversifying energy sources beyond hydropower

- Establishing resilient infrastructure to support universal energy access
- Fostering private sector participation in solar, wind, and geothermal projects

Under the National Electrification Plan 2.0 and the National Energy Compact, Ethiopia aims to expand installed generation capacity to 14,000 MW and achieve 75% electricity access by 2030, integrating both grid-extension and off-grid solutions.

Recent Regulatory Developments

Power Sector Efficiency Directive (2025): This directive mandates competitive tendering and integrated least-cost development planning for all new projects, including both public and private sector investments. The framework is intended to enhance transparency, reduce infrastructure costs, and optimize resource allocation.

Energy Regulation No. 447/2019: Proclaimed by the Ethiopian Council of Ministers, this regulation defines license classes and application requirements (technical, financial, and environmental documentation), establishes notice and review procedures, and authorizes detailed directives for grid and off-grid activities.

Mini-Grid Directive No. 268/2020: This directive formalizes the regulatory framework for private mini-grids, establishing clear rules for licensing, tariff-setting, and operations. This unlocks bankability and provides predictable regulatory treatment for off-grid renewable energy developers.

PPP Proclamation No. 1076/2018 (amended by No. 1283/2023): Provides the legal basis for competitively procured IPPs and bankable PPAs. The 2023 amendment introduced flexibility, including a direct negotiation mechanism under specific circumstances, to accelerate project development.

Utility Sector Reforms

Ongoing reforms include restructuring the Ethiopian Electric Power to separate its commercial generation function from system operation and formalizing clear rules of engagement for IPPs. These reforms enable market diversification and operational independence, supporting a more competitive and transparent power sector.

<u>Implications for I-REC(E) Implementation</u>

The existing legislative framework supports I-REC(E) implementation by:

- Establishing clear licensing requirements that enable verification of generation assets
- Creating regulatory oversight mechanisms through PEA
- Requiring technical and environmental documentation that supports data integrity
- Enabling private sector participation, which creates demand for renewable energy attribute tracking
- Providing a stable regulatory environment for long-term renewable energy investments

No identified legislation restricts the voluntary tracking and certification of renewable energy attributes through the I-REC(E) system. The regulatory framework is neutral toward voluntary certification schemes and does not mandate participation in any competing attribute tracking system.

Planned and Under-Development Legislation

National Carbon Market Law, which is under development calls for comprehensive carbon market law to be developed and enacted in 2025-2026.

Planned Scope:

- Regulation of carbon credit transactions under Paris Agreement Article 6 (international carbon markets)
- Governance of voluntary carbon market (VCM) participation

- Institutional roles and responsibilities (Designated National Authority, registry, MRV systems)
- Approval and authorization procedures for carbon projects
- Accounting and reporting requirements to prevent double counting
- Legal certainty for carbon credit transactions
- Integration with sectoral regulatory frameworks

Planned Coverage Sectors: Renewable energy, forestry (REDD+), clean cooking, energy efficiency, electric mobility, agriculture

Impact on I-REC(E):

- Potential Ambiguity/Risk: Carbon market law may create uncertainty if it addresses renewable energy environmental attributes without explicitly distinguishing between:
    - Carbon credits (representing GHG emission reductions)
    - Renewable energy certificates (representing MWh of renewable electricity generation)
- The planned law must clarify that I-REC(E) certificates (tracking renewable electricity attributes) are distinct from carbon credits (tracking emission reductions), and that both can coexist without double-counting

Recommended Approach: The International Tracking Standard Foundation (I-TRACK Foundation) and Energy Peace Partners should engage with Ministry of Planning and Development, Ministry of Water and Energy, and PEA during law drafting to ensure:

1. Clear distinction between renewable energy certificates and carbon credits
2. Explicit carve-out or acknowledgment of voluntary RE certificate systems
3. Anti-double-counting provisions that prevent claiming both carbon credits and I-REC(E) for the same environmental benefit, but allow one or the other
4. No unintended restrictions on I-REC(E) issuance or trading.

1.7 Environmental and Renewable Electricity Legislation

Ethiopia's legal framework for renewable electricity is anchored by a series of existing and evolving environmental, energy, and investment policies that collectively promote sustainable power sector growth.

Climate and Environmental Policy Framework

Climate-Resilient Green Economy (CRGE) Strategy: Launched in 2011, the CRGE Strategy frames Ethiopia's commitment to low-carbon economic development. The strategy identifies priority sectors for greenhouse gas mitigation and adaptation, with the energy sector representing a significant mitigation opportunity.

Nationally Determined Contribution (NDC): Ethiopia's updated NDC, submitted in July 2021, commits to a 68.8% reduction in greenhouse gas emissions compared to a business-as-usual scenario by 2030. The energy sector provides a substantial portion of this mitigation wedge, creating strong policy support for renewable energy expansion and justifying grid and mini-grid scaling initiatives.

Environmental Impact Assessment Requirements

Comprehensive Environmental Impact Assessments (EIAs) are mandatory for all new electricity projects, administered by the Ethiopian Petroleum and Energy Authority in coordination with environmental protection agencies.

Renewable Energy Development Framework

The National Electrification Plan 2.0 and Ethiopia's National Energy Compact establish clear targets for increasing generation capacity and ensure a balanced approach incorporating grid extension, mini-grid development, and standalone systems for rural and urban communities.
The Power Sector Efficiency Directive (2025) requires competitive project tendering, integrated planning, and transparency in both public and private development. This reinforces oversight mechanisms and reduces potential conflicts of interest, strengthening the institutional foundations for Ethiopia's renewable energy expansion.

Support for I-REC(E) Implementation
Ethiopia's environmental and renewable energy legislation supports I-REC(E) implementation by:

- Creating strong policy demand for renewable energy development
- Requiring environmental documentation that supports verification of renewable attributes
- Establishing clear institutional responsibilities for oversight
- Aligning with international climate commitments that drive corporate renewable energy procurement
- Providing a stable policy environment that encourages long-term investments in renewable generation

No identified environmental legislation conflicts with or restricts the voluntary certification of renewable energy attributes through the I-REC(E) system. The framework is complementary to voluntary tracking mechanisms and may enhance the value proposition for renewable energy investments.

1.8 Existing/Planned Certificate or Support Systems

I-REC(E) Status in Ethiopia
Ethiopia has been an I-REC(E)-approved country since 2022 with Energy Peace Partners (EPP) serving as the authorized local Issuer, operating under the I-TRACK Foundation's governance framework. This establishes a credible, internationally recognized tracking system for renewable energy attributes in Ethiopia.

Registry Infrastructure
There is currently no separate state-operated renewable energy certificate registry in Ethiopia. Market participants rely exclusively on the I-REC(E) registry.

Power Purchase Agreements and Attribute Rights
Most renewable energy PPAs in Ethiopia are structured as energy-only agreements, with renewable energy attributes typically not explicitly addressed in contract terms. This creates flexibility for attribute tracking through I-REC(E) certification, as environmental attributes are generally not claimed or transferred through the PPA structure. Project developers and owners should review specific PPA terms to confirm attribute ownership rights before registering projects for I-REC(E) issuance.

1.9 Extent of Engagement with Government

The Government of Ethiopia plays a key role in the promotion and oversight of private sector initiatives, including renewable energy infrastructure development. Government engagement has been essential to establishing I-REC(E) certification in the country.

Key Stakeholders and Partners

Mercy Corps and its local subsidiary, Humanitarian Energy (HumEn), are partners of Energy Peace Partners in this initiative. These organizations are actively engaged with the Ministry of Water and Energy and the Ethiopian Petroleum and Energy Authority regarding the deployment of renewable energy projects and the implementation of the I-REC(E) system.

Government Support

In 2022, the Ministry of Water and Energy issued a formal letter of support for the introduction of renewable energy certificates in Ethiopia to Energy Peace Partners. This letter demonstrates government awareness of and support for voluntary renewable energy attribute tracking mechanisms.

1.10 Expected Response from Government

Current Experience with I-REC(E) Issuance

I-REC(E), particularly P-RECs, have already been issued from renewable energy projects in Ethiopia. To date, there has been no negative feedback or regulatory barriers from government authorities regarding the issuance of I-REC(E).

Anticipated Government Position

Based on existing engagement and the operational track record, the government and regulatory authorities are expected to maintain a supportive or neutral stance toward I-REC(E) certification. Key factors supporting this expectation include:

- Alignment with National Priorities: I-REC(E) certification supports Ethiopia's renewable energy development goals and climate commitments without requiring government financial resources or administrative burden.
- Attraction of Private Investment: Voluntary certification mechanisms like I-REC(E) can enhance project bankability and attract international corporate buyers, supporting the government's objective of increasing private sector participation in the energy sector.
- No Conflict with Existing Policies: I-REC(E) operates as a voluntary, market-based mechanism that does not interfere with existing tariff structures, licensing requirements, or electricity market operations.
- International Credibility: I-REC(E) certification provides international recognition for Ethiopia's renewable energy resources and supports the country's reputation as a renewable energy leader in Africa.

Potential Future Developments

Should the government consider implementing mandatory renewable energy targets, carbon pricing mechanisms, or a state-operated certificate scheme in the future, coordination with the I-TRACK Foundation would be important to ensure compatibility and avoid double-counting of environmental attributes. The I-REC(E) governance framework includes provisions for interaction with government schemes to maintain environmental integrity.

1.11 Proposed Restrictions

To preserve the environmental integrity of the I-REC(E) tracking system in Ethiopia and to avoid double issuance or double counting of environmental attributes, the following restrictions and safeguards are recommended:

1. Metering and Measurement Standards

Requirement: All generation facilities must be equipped with calibrated, tamper-proof metering equipment that meets PEA technical standards and provides accurate measurement of electricity generation in MWh.

Specific Standards:

- Grid-connected facilities: Must comply with grid code metering requirements for generation measurement and reporting
- Off-grid and mini-grid facilities: Must install appropriate metering equipment capable of recording total generation output that can be monitored remotely.

Rationale: Accurate metering is fundamental to the integrity of the I-REC(E) system, ensuring that certificates represent actual renewable electricity generation.

2. Grid Connectivity

No Restrictions: Both grid-connected and off-grid renewable generation facilities are eligible for I-REC(E) certification, provided they meet metering and measurement requirements.

Rationale: Ethiopia's energy access strategy relies on both grid extension and off-grid solutions. Excluding off-grid facilities would undermine the country's universal access objectives and limit the applicability of I-REC(E) certification for rural development projects.

3. Cross-Border Electricity Flows

Treatment of Exports: Renewable electricity that is physically exported to neighbouring countries (Kenya, Djibouti, Sudan, etc.) may be eligible for I-REC(E) certification provided:

- The electricity is generated from eligible renewable sources in Ethiopia
- Export volumes are accurately measured and documented
- The environmental attributes are not claimed or certified in the importing country
- Compliance with any applicable regional power pool attribute tracking rules

Treatment of Imports: Electricity imported into Ethiopia from neighbouring countries is not eligible for I-REC(E) certification as Ethiopian generation, regardless of the energy source in the exporting country.

Rationale: Prevents double-counting across borders while recognizing Ethiopia's role as a renewable energy exporter in the region.

4. Avoiding Double-Claiming with Other Schemes

Should government support schemes or mandatory certificate systems be introduced in the future:

- Project participants must not simultaneously claim I-REC(E) and participate in government subsidy schemes where environmental attributes are explicitly claimed by the government
- Clear documentation of attribute ownership in PPAs and licensing agreements
- Coordination between I-TRACK Foundation and government authorities to establish appropriate interfaces

Rationale: Maintains environmental integrity and prevents double-counting of renewable attributes across different schemes.

1.12 Any Other Relevant Information

Corporate demand for voluntary renewable energy certificates within Ethiopia is currently limited, as the domestic market for corporate sustainability commitments and renewable energy procurement is still developing. However, this may grow as international companies establish operations in Ethiopia's industrial parks. The primary demand for Ethiopian I-REC(E) is expected to come from:

- International corporations with supply chain operations in Ethiopia seeking to match their electricity consumption with renewable generation
- Development finance institutions and impact investors seeking to demonstrate additionality and development outcomes
- Companies pursuing Scope 2 emissions reductions in African markets
- Organizations interested in P-RECs that combine renewable energy attributes with peacebuilding and development impact.

Integration with Corporate Sustainability Goals
I-RECs from Ethiopia can support corporate buyers in meeting various sustainability frameworks and commitments, including:

- Greenhouse Gas Protocol Scope 2 reporting (market-based method)
- RE100 (100% renewable electricity) commitments
- Science-Based Targets initiative (SBTi) requirements
- Carbon Disclosure Project (CDP) reporting
- Sustainable Development Goals (SDGs), particularly SDG 7 (Affordable and Clean Energy)

Regional Context and EAPP Coordination
As Ethiopia increases electricity exports through the Eastern Africa Power Pool (EAPP), coordination on renewable energy attribute tracking across the region will become increasingly important. Ethiopia's early adoption of I-REC(E) positions the country well to play a leadership role in regional discussions on renewable energy attribute tracking.

Potential Conflicts with Future Schemes
While no conflicts currently exist, potential future policy developments should be monitored: If Ethiopia develops a compliance carbon market or participates in international carbon crediting mechanisms (e.g., Article 6 of the Paris Agreement), clear rules will be needed to prevent double-counting between carbon credits and I-REC(E) from the same generation.

Should Ethiopia introduce mandatory renewable portfolio standards for utilities or large consumers, the rules must clarify whether participation in mandatory schemes restricts participation in voluntary I-REC(E) certification.
If the government establishes its own renewable energy certificate registry, coordination with the I-TRACK Foundation would be essential to ensure interoperability or clear delineation of scope.

Power Purchase Agreement Considerations
Most PPAs in Ethiopia are structured as energy-only contracts that do not explicitly address renewable energy attributes. This default position is favorable for I-REC(E) certification, as it implies that environmental attributes remain with the generator unless explicitly transferred. However, as the market matures, IPP developers should:

- Explicitly address renewable attribute ownership in PPA negotiations

- Clarify whether the off-taker has any claim to environmental attributes
- Document attribute retention rights to support I-REC(E) certification eligibility

Capacity Building and Awareness

Continued capacity building and awareness-raising activities would support expansion of I-REC(E) certification in Ethiopia:

- Training for PEA staff on renewable energy attribute tracking concepts
- Workshops for renewable energy developers on I-REC(E) registration and certification procedures
- Engagement with potential corporate buyers (domestic and international) to build market demand
- Knowledge sharing with other EAPP member countries on lessons learned.

Implementation Challenges

Several practical challenges may affect I-REC(E) implementation:

Metering Quality: While grid-connected facilities generally have reliable metering, some off-grid and mini-grid projects may have limited metering infrastructure. Support for metering equipment and maintenance is important to ensure quality data generation, storage, transmission and verification.

Currency and Banking: Foreign currency constraints and banking sector challenges may affect international transactions related to I-REC(E) sales. Creative payment arrangements or escrow mechanisms may be needed.

Awareness and Capacity: Many renewable energy developers in Ethiopia have limited awareness of voluntary certificate markets. Targeted outreach and technical assistance can address this gap.

1.13 Author

Complete all fields.

Organization Name		ENERGY PEACE PARTNERS	
Signature			
Name (BLOCK CAPITALS)		LINDA WAMUNE, PIUS OUNA	
DATE	10	11	2025

The International Tracking Standard Foundation

Founder of I-REC

The International Tracking Standard Foundation
De Mortel 2D 5211 HV ‘s-Hertogenbosch
The Netherlands

www.trackingstandard.org