IISP Model G20 Study Guide

Energy Transition & Climate Action Taskforce

(Sherpa Track)

Agenda: To design actionable pathways for Southern Africa's energy transition, balancing renewable expansion, methane abatement, critical mineral governance, and a just transition for coal-dependent communities. To propose measurable, equitable, and feasible frameworks that align national strategies with regional cooperation and global climate commitments.

Letter from the Executive Board

Dear Delegates,

Welcome to the Energy Transitions & Climate Action Taskforce (ETCAT). It is both a privilege and a responsibility to join this committee at a defining juncture for Southern Africa and the global climate community. Across the region, nations face the dual imperative of advancing economic development while confronting the profound realities of climate change. Coal remains central to energy systems and employment, yet the momentum toward renewables grows stronger every year.

In ETCAT, you will engage with urgent questions: How can Southern Africa triple renewable capacity by 2030? How can methane emissions be abated effectively? How can critical mineral supply chains be governed with integrity and fairness? How can a just transition protect workers and communities reliant on coal and mining? These are not abstract questions, they are lived realities that will shape the region's energy future.

As an intermediate committee, ETCAT demands analytical precision and empathy. Ground your proposals in credible data, design mechanisms that are measurable and inclusive, and approach negotiation as collaboration, not competition. Whether proposing a hydrogen certification schema, methane abatement tracker, minerals registry, or just transition financing mechanism, ensure each idea rests on three pillars: feasibility, equity, and accountability.

We encourage rigorous debate, attentive listening, and innovative thinking. Let the conversations in this room aspire not merely to mirror global discourse, but to improve it. We look forward to the insights, creativity, and diplomacy each of you will bring.

Sincerely,
Arjun Morey & Palaash Gang
Executive Board
Energy Transitions & Climate Action Taskforce (ETCAT)

Committee Mandate, Scope, and Expectations

Mandate: ETCAT, under the SHERPA track, focuses on Southern Africa. Its task: facilitate coal-dependent nations' transition to clean energy while ensuring economic stability, social equity, and transparency.

Scope:

- Align with global frameworks: **Paris Agreement (2015), Glasgow Climate Pact (2021), COP28 Global Renewables Pledge**.
- Integrate regional frameworks: **AU Agenda 2063, African Renewable Energy Initiative, SADC Energy Protocol, AfDB & UNDP financing blueprints**.
- Focus areas:
    1. Tripling renewable energy capacity by 2030
    2. Methane abatement
    3. Critical minerals transparency
    4. Just transition for coal and mining workers

Expectations: Delegates must produce data-driven proposals with measurable mechanisms, balancing innovation with political feasibility. Align proposals with the **Just Energy Transition Partnership (JETP) model** and leverage multilateral funding channels like the Green Climate Fund and Adaptation Fund. Be ready to draft clauses reflecting national constraints and regional cooperation.

Guiding Question: How can Southern Africa achieve a just and affordable energy transition while reducing coal dependence?

Background & Context

1. Coal Dependency

- Coal generates ~85% of South Africa's electricity; mining supports tens of thousands of jobs.
- Renewable energy contributes <10% in many countries; grid constraints, regulatory uncertainty, and investment risk slow growth.

2. Methane Emissions

- Coal mine methane is potent (~80x CO_2 over 20 years).
- Abatement opportunities: regulatory mandates, financial incentives, carbon credits, penalties.

3. Critical Minerals

- Demand for lithium, cobalt, nickel, manganese, rare earths rising due to renewables.
- Challenges: opaque licensing, illegal mining, poor environmental standards, inequitable revenue sharing.

4. Social Dimension - Just Transition

- Tens of thousands of households depend on mining.
- Solutions: retraining, social protection, relocation support, incentives for new industries.

Core Problem Areas

1. Renewable Capacity Expansion

- Challenges: financing, grid limits, regulatory delays, currency risk, intermittency.
- Delegate solutions: distributed generation, utility-scale solar/wind, storage/back-up, concessional finance, local content requirements.

2. Methane Abatement

- Coal mines emit rising methane; feasible solutions exist but require monitoring and compliance.
- Delegate solutions: online tracker, standardized reporting, independent verification, public dashboards.

3. Critical Minerals Transparency

- Weak governance risks environmental damage and inequity.

- Delegate solutions: centralized minerals registry with digital traceability, cross-border coordination, civil society oversight.

4. Just Transition for Workers

- Risk: mass unemployment and social unrest if coal closure is rapid.
- Delegate solutions: dedicated financing, retraining/upskilling, public employment schemes, phased transition.

Principles for Delegates

- Feasibility & evidence-based proposals
- Equity & inclusivity
- Transparency & accountability
- Phased implementation
- Alignment with global and regional climate frameworks
- Social protection & labor inclusion
- Environmental stewardship & sustainability
- Regional cooperation & cross-border integration

Proposed Frameworks & Mechanisms

1. Hydrogen Certification Schema

- Standardized renewable hydrogen certification based on carbon intensity, energy source, production method, and auditing.

2. Methane Abatement Tracker

- Online monitoring platform for methane emissions with verification, alerts, and public dashboards.

3. Minerals Registry

- Centralized or regional database of licenses, production, ownership, and environmental compliance.
- Blockchain/digital verification recommended; align with EITI, AMGF, OECD guidance.

4. Just Transition Financing Mechanism

- Dedicated fund pooling public, private, and donor resources.
- Define eligibility, metrics, disbursement rules, auditing.
- Integrate climate finance instruments (Green Climate Fund, Adaptation Fund, MDBs, JETP).

Case Studies & Past Actions

- **South Africa JETP:** USD 8.5B pledged, delayed disbursement highlights importance of monitoring, local buy-in, and flexible implementation.
- **Global Methane Capture:** China, U.S., Australia - technically feasible at moderate cost.
- **EITI Registries:** Transparency improved where oversight is robust; weak institutions risk registry ineffectiveness.
- **Renewable Diversification:** Seriti Wind Power Station (155 MW, Mpumalanga) - example of coal companies transitioning to renewables.

Key Questions for Discussion

1. How should constrained national budgets allocate funds across renewable infrastructure, methane mitigation, social protection, and minerals registry development?
2. Should coal subsidies be phased out gradually or immediately, and what benchmarks ensure effectiveness?
3. How can hydrogen certification and methane tracker frameworks balance credibility, transparency, and inclusivity?
4. What strategies and technologies are most effective for methane abatement in coal mines and other sectors?
5. How can critical mineral supply chains be governed to ensure responsible extraction, transparency, and equitable community benefit?
6. What should a regional minerals registry include to balance commercial confidentiality with public oversight?
7. How can a just transition financing mechanism protect coal and mining workers while promoting alternative economic opportunities?
8. Which policy and social interventions (retraining, social protection, public employment) are essential for an equitable energy transition?
9. How can Southern Africa triple renewable energy capacity by 2030 while ensuring grid stability, affordability, and investor confidence?
10. How can Southern African states coordinate regionally (via SAPP or other frameworks) to ensure cross-border energy and climate resilience while minimizing social disruption?

For Further Reading

Energy & Renewables

- **International Renewable Energy Agency (IRENA) -** *Renewable Energy Statistics & Policy Reports*
- **African Union -** *Africa Renewable Energy Initiative (AREI) Annual Reports*
- **Southern African Power Pool (SAPP) -** *Regional Grid Integration & Planning Documents*
- **World Bank -** *Energy Sector Management Assistance Program (ESMAP) Reports on Africa*

Climate & Methane

- **UNEP -** *Global Methane Assessment & International Methane Emissions Observatory (IMEO)*
- **International Energy Agency (IEA) -** *Methane Tracker & Africa Energy Outlook*
- **Climate Analytics -** *Methane Mitigation Pathways in Coal & Energy Sectors*

Critical Minerals & Responsible Extraction

- **Extractive Industries Transparency Initiative (EITI) -** *Country Reports & Guidance for Africa*
- **OECD -** *Due Diligence Guidance for Responsible Mineral Supply Chains*
- **African Minerals Governance Framework (AMGF) -** *Policy & Regulatory Reports*
- **US Geological Survey (USGS) -** *Critical Minerals and Global Supply Chain Reports*

Just Transition & Social Policy

- **International Labour Organization (ILO) -** *Guidelines for a Just Transition to a Low-Carbon Economy*
- **World Bank -** *Just Energy Transition Partnership (JETP) Case Studies & Lessons Learned*
- **African Development Bank (AfDB) -** *Financing Models for Social Protection and Skills Development in Energy Transitions*

Financing & Policy Tools

- **Green Climate Fund -** *Funding Opportunities & Case Studies on Energy Transition*
- **Climate Investment Funds (CIF) -** *Accelerating Coal Transition Program Documentation*
- **UNDP -** *Policy Toolkits & Technical Guidelines for Low-Carbon Development*

Additional Scholarly/Analytical References

- **Swaniti Initiative -** *Coal Mine Methane Analysis & Policy Recommendations in South Africa*
- **Res4Africa Foundation -** *Energy Transition Retrospectives and Country Profiles*
- **Journal of Energy Policy -** *Peer-Reviewed Articles on African Energy Transition & Decarbonization*