UNIVERSIDADE FEDERAL DE PERNAMBUCO

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CENTRO DE TECNOLOGIA E GEOCIÊNCIAS - ESCOLA DE ENGENHARIA DE PERNAMBUCO

DEPARTAMENTO DE ENERGIA NUCLEAR

PROGRAMA DE PÓS-GRADUAÇÃO EM TECNOLOGIAS ENERGÉTICAS E NUCLEARES - PROTEN

MASTER'S AND DOCTORAL COURSES

ENGLISH EXAM 2025.2

OCTOBER 17, 2025, START: 10:00 AM; END: 12:00 PM

CANDIDATE: ____

REGISTRATION NO.: ____

LEVEL: ___MASTERS ___DOCTORATE

****GUIDELINES****

i. The exam will last for 2 (two) hours, as specified in the selection schedule.
ii. The question booklet contains a total of 10 (ten) questions.
iii. Each answer must be recorded in the designated location.
iv. It is essential to mark only one correct alternative, as instructed in each statement.
v. No form of consultation will be allowed during the exam.
vi. Answers must be marked using a ballpoint pen.

"Sustainability is not only about energy — it is about justice."

Text 1

Shobande et al., 2025. Quantifying the role of the energy transition in alleviating marginalization and advancing inclusive green growth.

Achieving a genuine energy transition and fostering inclusive green growth requires addressing the marginalisation of workers. Failing to do so is an ethical failure and a significant barrier to realising a just and sustainable future. The path to sustainable development and a green economy cannot be built on the exploitation or exclusion of those whose livelihoods are directly affected by these transformations. Genuine progress cannot be claimed if large segments of society are left to absorb the economic and social costs of decarbonisation. Sustainable development must be inclusive, ensuring that the benefits of the green transition are shared equitably, with no one left behind in pursuing both environmental and economic goals.

Despite decades of progress in global economic development, millions remain trapped in energy poverty, lacking access to affordable, reliable, and clean energy services. This persistent deprivation significantly constrains human development and economic mobility, particularly in low-income and fragile regions where unreliable energy infrastructure compromises critical services such as healthcare, education, and public safety. The continued reliance on traditional biomass and fossil-based fuels not only poses serious health hazards but also reinforces systemic socio-economic vulnerabilities. As the global economy transitions towards low-carbon energy systems in response to climate imperatives, this shift is widely viewed as an opportunity to align environmental sustainability with economic transformation. Yet, mounting empirical evidence reveals that the green transition also entails complex distributional consequences that risk exacerbating existing inequalities if not managed with a deliberate focus on inclusivity and justice.

The concept of inclusive green growth has emerged as a normative framework aimed at reconciling the goals of environmental preservation and social equity. Defined by its commitment to reducing greenhouse gas emissions per unit of GDP while ensuring broad-based access to economic opportunities and social protection, inclusive green growth emphasises the equitable distribution of environmental benefits and green employment. Key indicators include increased access to sustainable jobs for marginalised populations, investments in renewable energy in underserved areas, and policies that enhance resilience while promoting social equity. However, this framework remains under-theorized and under-implemented in many national energy and economic strategies. Particularly overlooked are the systemic patterns of marginalisation—the structural exclusion of individuals and groups from political, social, and economic life—manifested in unequal access to resources, limited participation in decision-making, and chronic exposure to poverty and discrimination.

Fonte: https://doi.org/10.1016/j.jenvman.2025.126241

1. According to the text, what is considered an ethical failure in the process of achieving a green economy?

a) Investing too much in renewable technologies.

b) Failing to address the marginalisation of workers affected by the transition.

c) Increasing the costs of decarbonisation for developing countries.

d) Reducing the use of fossil fuels too quickly.

2. The author implies that sustainable development must:

a) Focus only on environmental protection.

b) Prioritise rapid decarbonisation regardless of social impact.

c) Integrate environmental and social equity goals.

d) Avoid any type of government intervention.

3. In the text, "energy poverty" mainly refers to:

a) A lack of financial investment in fossil fuel companies.

b) Limited access to affordable and reliable clean energy services.

c) Unemployment caused by automation in green industries.

d) Overdependence on renewable sources.

4. Which of the following statements is NOT supported by the text?

a) Energy transition can positively influence inclusive green growth.

b) Labour marginalisation acts as a barrier to sustainability.

c) The energy transition has only environmental consequences, not social ones.

d) Unequal management of the transition may deepen inequalities.

5. The expression "no one left behind" in the text means that:

a) Governments should prioritise rural communities over cities.

b) Everyone should equally benefit from the green transition.

c) Industrialized nations must lead renewable innovation.

d) People must abandon fossil fuel jobs immediately.

Text 2

Lazaro et al., 2025. Climate commitments and energy transition pledges in Latin America: Where is the region headed?

In the 1960s and 1970s, many governments in developing countries, including those in Latin America, embraced the notion that “the worst pollution is poverty”. This perspective reflects the belief that poor environmental conditions result from underdevelopment and inequality and that economic growth is essential to improve both social welfare and environmental outcomes. (…) According to this perspective, environmental degradation is not an inevitable consequence of progress, but rather the result of a social organization rooted in destructive values. Therefore, human society depends not on overcoming insurmountable physical barriers, but on transforming social and political structures.

As a developing region, Latin America often appeals for flexibility and international support for its transition from carbon-intensive industries. However, despite contributing less than 8 % of cumulative climate damage, and their position as “climate creditors”, this status does not exempt them from their responsibility GHG emissions and transition to low-carbon economies. Achieving this balance requires reconciliation of short-term economic imperatives with long-term sustainability goals.

However, the current economic and political context in Latin America poses significant challenges for countries seeking to reduce GHG emissions while advancing their energy transitions. Many countries in the region remain highly dependent on the extraction and export of natural resources, particularly oil, gas, and minerals, as key drivers of economic growth. This dependence creates a fundamental dilemma related to the achievement of an affordable, inclusive, and sustainable energy transition without jeopardizing economic stability. In some countries, fossil fuel industries generate substantial government revenues, provide employment for millions of workers, and serve as critical components of local and national tax bases.

Despite the growing prominence of the term “energy transition” in Latin American political and policy discourse, its meaning remains ambiguous and politically contested. (…) A stark example is the Camisea gas project in Peru, one of the largest natural gas reserves in the region (…). The extracted gas is overwhelmingly destined for external markets, with most of it exported as liquefied natural gas or supplied to urban industries. Paradoxically, despite the significant revenue generated by the project, many Amazonian villages near extraction sites still lack access to electricity, and no household in the Camisea extraction zone has a direct natural gas connection. This contradiction highlights how dominant energy policies, whether centered on fossil fuels such as natural gas or large-scale renewable projects, continue to reproduce historical patterns of exclusion.

A similar contradiction can be seen in Brazil, where the government is attempting to balance its climate commitment with economic pressure. Under the administration of President Luiz Inácio Lula da Silva (2023–2026), climate action and energy transition have been positioned as key policy priorities with the creation of the Secretariat for Energy Transition within the Ministry of Mines and Energy, signaling an institutional commitment to advance sustainable energy pathways. However, Brazil’s energy transition strategy reveals deep contradictions, most notably, the continued push for oil exploration, particularly in the Amazon Basin, despite its potential environmental and social impacts on the rainforest and indigenous communities. This tension reflects the broader challenges that Latin American countries face when trying to balance environmental sustainability and economic development.

Fonte: https://doi.org/10.1016/j.esd.2025.101779

1. The statement "the worst pollution is poverty" expresses the idea that:

a) Economic growth necessarily harms the environment.

b) Environmental problems can only be solved by limiting industrialization.

c) Poverty itself is seen as a major source of environmental degradation.

d) Development and environmental protection are unrelated issues.

2. According to the text, Latin America's role as a "climate creditor" means that:

a) The region has caused most of the world's cumulative climate damage.

b) It should be exempt from participating in global emission reductions.

c) It has contributed relatively little to climate change but still bears responsibility for mitigation.

d) It receives financial compensation for its low emissions.

3. The Camisea gas project in Peru illustrates that:

a) Fossil fuel projects always improve local access to energy.

b) Economic benefits from energy exports do not necessarily translate into social inclusion.

c) Exporting liquefied natural gas has eliminated poverty in Amazonian communities.

d) Renewable energy policies are fully inclusive in Latin America.

4. In Brazil, the text highlights a contradiction between:

a) Expanding wind energy and reducing hydropower investments.

b) Economic growth and environmental protection in the Amazon Basin.

c) Decreasing oil exploration and rising energy imports.

d) Climate commitments and social policies in the urban sector.

5. The passage suggests that one major challenge for Latin American countries is:

a) Eliminating all dependence on mineral extraction within a decade.

b) Reconciling economic stability with an inclusive and sustainable energy transition.

c) Achieving energy independence from neighboring countries.

d) Limiting foreign investment in renewable energy.

Good luck and success!