


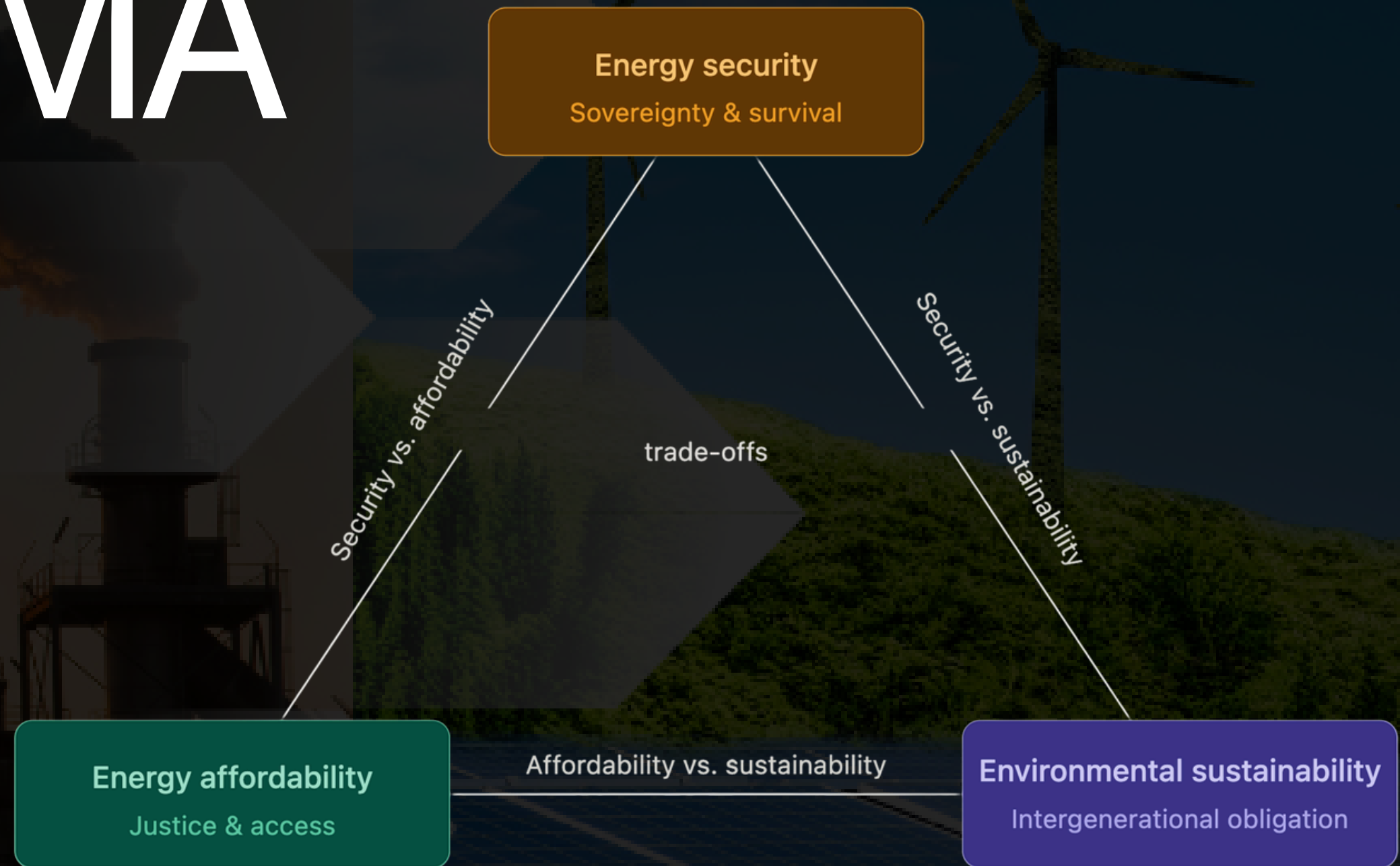
THE ENERGY TRANSITION



Structural Tensions & **Ethical Dilemmas** =

CAITLYNN RAIS, JACOB KNACK, SERGIO CAMPANINI, ZEINAH ABDELSALAM

THE ENERGY TRILEMMA



ENERGY SECURITY

Ethical Culture / Status Quo

Immediate state survival and economic stability over long-term environmental considerations. Russia-Ukraine war and current Iran war exposed limits of this thinking.



Implementation Of Driving Forces For Ethical Action

- Current economic devastation a practical driver to decouple from choke points and petrostate dependencies.
- Climate change continues to threaten many countries at an existential level.



Constraining / Resisting Forces For Ethical Action

- Both historically and currently given the ongoing conflict, there is a political incentive for short-term action. Prioritizing grid stability overrides long-term interest in transition, and oil shock leads to need for immediately available alternatives.
- The global economy is entrenched with fossil fuels.
- Regional powers exert significant structural power over global energy markets.

Means Of Addressing Constraining / Resisting Forces

- Legislative constraints.
- Multilateral financial infrastructure to protect investors.
- Building consumer-side coalitions.

Analysis With Ethical Frameworks

- According to a long-term utilitarian vision, suffering from future climate crises and potential geopolitical shocks demands a restructuring toward renewables to maximize ultimate global welfare.
- Veil of ignorance approach in favor of energy transition to prioritize energy security of dependent states who bear the costs.





Real / Potential Causes of Ethical Success / Failure

Ethical failure if reactionary politics will win over structural state interests and multilateral arrangements. Current war could lead to this, but also to a success if current economic hardship creates political capital to invest in aligning security necessity of independence with moral long-term imperative of sustainability.

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Recommended Course(s) of Action

Renewables not to be seen as tools to address climate change alone, but as national security imperatives as well as ethical responsibility. Regional energy diversification (especially in the GCC) can mitigate risks of war disruptions to energy supplies and reliance on fossil fuels.

ENERGY AFFORDABILITY



Global North vs South Investing

The capital needed for investing in these technologies are heavily centered in countries with the excess financial resources to outbid others for highly desired parts and technologies. The capital for cheap renewables, such as wind and solar might be the cheapest they have ever been, but the cost for developing nations to borrow that money hasn't changed and remains much higher than developed nations.

Resource Extraction

Many of the minerals and rare-earths that are required for cheap renewables are mined in countries who lack labor rights and protections for extremely dangerous jobs.

Socioeconomic Differences

Many of the policies in place that incentivize communities towards the energy transition hit the poorest the hardest; while only providing a slight price increase to the richest. Many of the poorest who would take the largest comparative hit would be paying for those who come later, but only further exacerbating their socioeconomic station.

Those who are hardest hit by global climate changes are often the poorest and most marginalized communities who need immediate action to be taken, while the richest have the resources to avoid being largely impacted by climate change.



ENERGY SUSTAINABILITY

Ethical Status Quo

- Renewable capacity is growing but fossil fuel consumption hasn't declined
- Energy addition, not transition
- Culture-forming mechanisms normalize continued harm: lobbying, legacy infrastructure, geopolitical framing
- Sustainability treated as optional

Driving Forces

- International climate agreements create multilateral accountability pressure
- Youth and civil society movements demand systemic action
- Scientific consensus builds moral urgency

Constraining Forces

- Political cycles are 2–4 years; climate targets are 2050
- Fossil fuel industries shape both policy and political culture
- Commons problem: emissions cross borders, so actors can defect without immediate consequences





Addressing Constraints

- Reframe sustainability as long-term security
- Structural reforms that separate long-term energy policy from short-term political incentives
- Name culture-forming mechanisms explicitly as ethical problems, not just political ones

Ethical Framework

- Johnson's culture-forming mechanisms: the ethical environment is built by those who benefit from it
- Who controls what feels normal in energy policy?
- Banality of wrongdoing: harm persists through structure, not malice
- No individual feels accountable → the system produces the outcome

Success / Failure

- Success: breaking the feedback loop between short-termism and fossil fuel entrenchment
- Failure: renewables grow alongside fossil fuels, never replacing them
- Across all three trilemma pillars: misalignment between who decides, who benefits, and who bears the cost



THE TRILEMMA DOESN'T RESOLVE It Redistributes...

Security



Sustainability

Climate shocks justify retrenchment, not transition

Affordability



Sustainability

Extractive finance makes transition an imposed sacrifice

Security



Affordability

Energy as national asset produces zero-sum access