HOW CAN WE FINANCE ENERGY TRANSITION IN LOW- AND MIDDLE-INCOME COUNTRIES?

SUMMARY

NTNU | Strategic Research Area Energy
Energy Transition Initiative

REFLECTIONS FROM A WORKSHOP DURING ENERGY TRANSITION WEEK

Access to energy is fundamental to economic development and social welfare. For low- and middle-income countries (LMICs), reliable and sustainable energy supply is not just a technical issue, it is essential for the functioning of hospitals, schools, and businesses, and for building resilient communities. Yet, financing the clean energy transition in these countries remains a persistent challenge.

At a workshop during Energy Transition Week, international experts from research, policy, and finance gathered to discuss: How can we unlock development finance for LMICs? And how do we build partnerships that last?

Perceived Risk vs. Actual Risk

One key theme that emerged was the gap between perceived and actual investment risk in LMICs. Many participants highlighted that risk is often overstated, particularly by actors in the Global North. This perception acts as a barrier to private capital, even when potential returns—both financial and social—are significant.

Ironically, such caution may itself be the greatest risk. As one speaker noted: "What is the risk of not building competence and capacity in LMICs?" Without investment in local systems and innovation, the global energy transition risks becoming unequal, ineffective and in the end not realizable.

NTNU and SINTEF experience from projects in Africa, Latin America, and Southeast Asia supports this insight: with local knowledge, robust partnerships, and adequate risk mitigation mechanisms, energy projects in LMICs can be both viable and transformative. Innovative design of hydro power turbines that better stand sediments in Nepal, handling of hazardous waste in Myanmar and the use of natural cooling refrigerants in food value chains in India are examples.

Rethinking Business Models and Investment Logic

Conventional investment models are often ill-suited to the conditions and needs of LMICs. The complexity of infrastructure development, coupled with limited institutional capacity, requires business models that are adaptive, inclusive, and long-term. However, both public and private investors tend to operate within familiar frameworks that prioritize short-term returns and low perceived risk.

A shift is needed—towards blended finance, patient capital, and stronger public-private collaboration aimed at establishing whole value chains. Financial actors must be willing to rethink traditional approaches and engage more actively in co-developing solutions with local stakeholders.

Norway's Role and Potential

Norway plays a unique role in this landscape. Through mechanisms such as Norfund and embassy-led development programs, Norwegian resources are already supporting clean energy development in several LMICs. Norway also contributes to major international financing instruments as part of its global climate commitments.

At the same time, there is potential to align these tools more effectively. One example discussed at the workshop was what several participants referred to as "the Norwegian model"—open calls for applied research and development, involving close collaboration between research institutions and industry.

Here, however, a structural gap becomes evident: while the Norwegian Research Council funds early-stage innovation, NORAD typically supports mature, proven technologies. This creates a financing valley in the middle—precisely where innovation for LMIC contexts is most needed. Bridging this gap could help scale solutions more rapidly and inclusively.

From Energy Transition to Systemic Transformation
The workshop also emphasized that the energy transition is not merely a matter of switching technologies, it is about systemic transformation. Financing is only one part of the puzzle. Equally important is investing in innovative ecosystems, strengthening local value chains, and ensuring meaningful participation from local actors throughout the project lifecycle.

Capacity building emerged as a recurring priority: not only technical training, but also institutional development, regulatory frameworks, and long-term knowledge transfer. Institutions like SINTEF, NTNU and international partners, can play a central role in supporting this transformation by joining local partners in interdisciplinary research and development of applied solutions.

CONCLUSION:

Towards Inclusive, Equitable Transitions
If we are to accelerate the global energy transition, LMICs must be at the center—not the periphery—of the process. This requires not only mobilizing more funding, but also rethinking how that funding is structured, deployed, and evaluated.

The workshop during Energy Transition Week laid a valuable foundation for future dialogue. SINTEF and NTNU remain committed to developing technology and knowledge for a better society. In the context of LMICs, this means working with partners to co-create solutions that are robust, inclusive, and tailored to local needs, ensuring that no one is left behind in the global transition.

WORKSHOP PARTICIPANTS ENGAGED IN DISCUSSION. FROM LEFT TO RIGHT:
MERON TESFAMICHAEL, OLE JØRGEN NYDAL, ANNELI ALATAO PAULSEN, LUCY BAKER, AND ANDREAS VASE.

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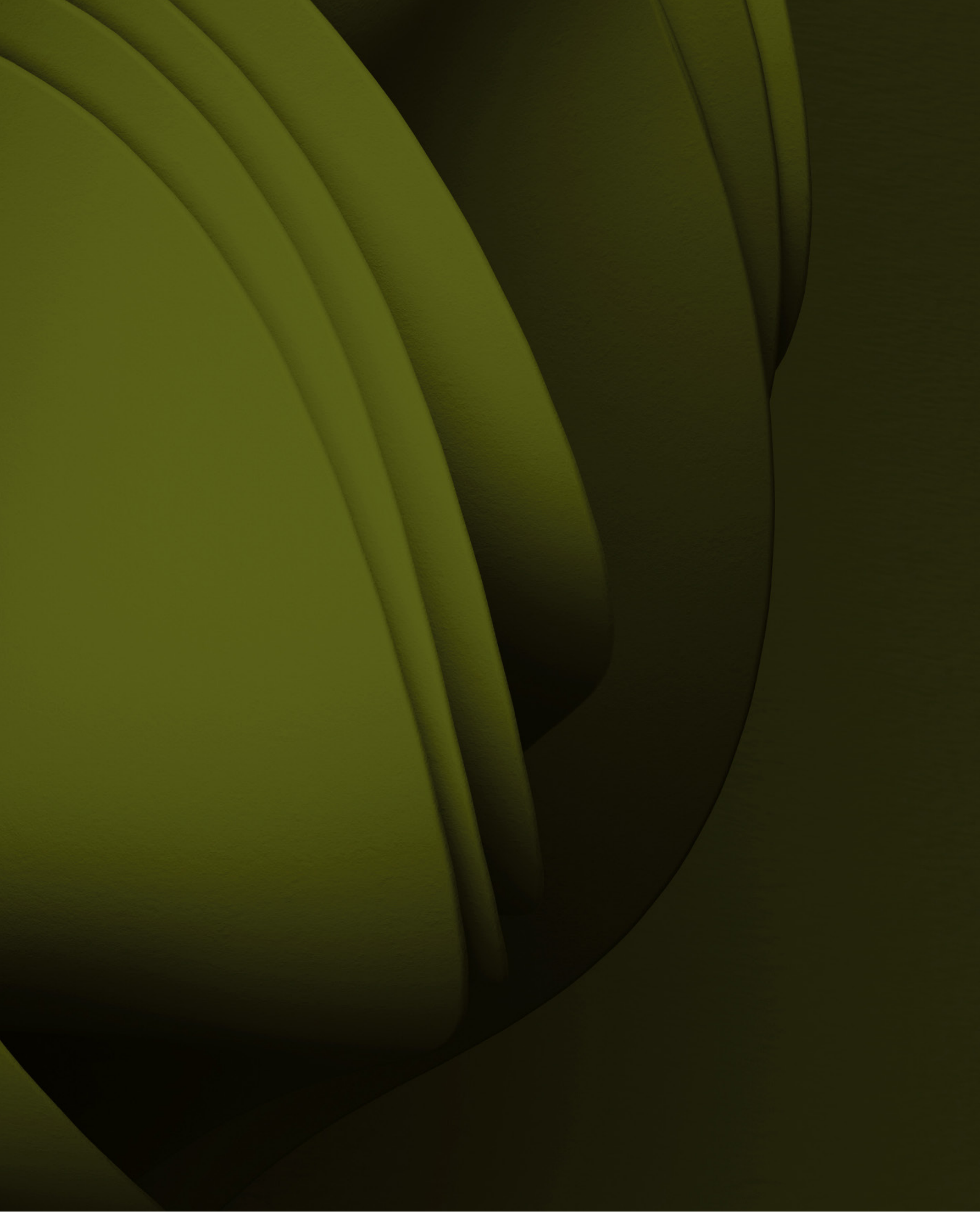

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