



## 4TUs for Energy Access: Theory of Change

### Problem Statement

- The efforts to achieve the goals of SDG7 face multiple challenges in terms of justice, resilience, contextuality, sustainability, scalability and long-term livelihood improvement. These challenges are deeply interconnected and require a systemic, multi-stakeholder, transdisciplinary approach underpinned by a long-term vision.

### Long-term Goals

- We produce meaningful knowledge that brings together, synthesizes, and expands on the lessons learnt and best practices in the field of energy access in diverse countries of the Global South.
- This happens by including multiple disciplines, methods, and data to make sure that the research is well balanced across various disciplines which helps to advance a broader societal impact. With our academic, and transdisciplinary approach we can illuminate the invisible and bring to light the systemic roadblocks in the entire institutional ecosystem spanning from problem to solution.
- With our knowledge co-creation and innovation-driven mindset, we help develop sustainable, circular, just, and context-appropriate solutions for improving people's livelihoods and societal well-being.
- With our expertise we disseminate and share the knowledge with practitioners, changemakers, and other members of society. We consider ourselves as mediators between academia, practitioners and changemakers in energy access. We strive to facilitate access to relevant knowledge that remains oftentimes hidden behind disciplinary jargon and the paywalls of academic journals.
- We educate the next generations of young professionals committed to contributing to just and inclusive energy transition.
- We contribute to an academic discourse that frames issues of just, inclusive and effective access to sustainable energy as *shared global development challenges* which transcend the North-South divide. We therefore actively pursue to establish a network of collaborations with partners around the globe, in which knowledge is produced on eye-level and is transferred in all directions.

- In doing so, we acknowledge the fact that resources, equipment, political support for academic knowledge production are not distributed equally across the globe. We therefore commit to supporting network partners that are underprivileged in this regard, to build the capacities needed to contribute to the global academic discourse on energy access.

### Intermediate Outcomes

- Enhanced collaborations among different stakeholders and changemakers along the entire institutional ecosystem and across geographic boundaries
- Enhanced co-creation processes with local stakeholders in equitable partnerships
- Increased knowledge on the effectiveness of energy access interventions for different communities through better monitoring and evaluation.
- Enhanced number of research embedded in projects that are strongly process-focused, i.e., that incorporate continuous reflection, inter-stakeholder learning, and improvement cycles instead of rigidly adhering to pre-set goals.
- A higher number of new co-created, integrated solutions that could be game changers for universalizing energy access in a circular, just, and sustainable manner.
- Improvements to existing technologies
- Enhanced sustainable and just business models
- Enhanced uptake of knowledge and innovations by the institutional ecosystem surrounding access to energy related challenges
- More testing in the field for real-life application
- Increasing the capacity and expertise and building larger pool of human capital to address the energy access challenge
- Insights to inform the long-term sustainable development agenda on energy access (i.e., beyond 2030)

### Outputs until 2030

- 1 jointly developed centralized course or program on sustainable development and energy access in LMICs
- 1 jointly developed MOOC
- Embedding entrepreneurship and business plan development/design modules to new and existing courses related to energy access
- At least 14 SDG7-related research articles produced in equal partnership with partners in LMICs
- To increase outreach of the academic output we will communicate it through:
  - Comprehensible (short) videos on social media
  - Blogs
  - Podcasts
  - Newsletters
  - Issue briefs or policy briefs
  - Existing professional outlets
  - Our presence in forums and summits
- One training program utilizing challenge-based learning, involving multidisciplinary student teams from North and South, to foster learning communities around sense making of practical energy access problems and collaborate to work out a path towards workable solutions

- At least 1 local living lab organized together with a partner educational institute on each continent of the focus continents being Africa, Central America, South America and Asia.
- Integrated case studies in the (existing) courses under supervision of the 4TU team
- 15 master theses on energy access topics per university

### Activities

- Setting up partnerships with a variety of local stakeholders bringing in multiple perspectives, for purposes of research and education
- Lobby within the four universities for providing the resources required
- Create a bigger pool for human capital building by matching demand from organizations with interest from students
- Conduct of multiple training programs/academies to train local academic staff
- Provision of additional training programs/academies for students
- Provision of training and guidance for aspiring entrepreneurs with objectives that align with ours
- Setting up a dedicated team/secretariat to run the alliance.

### Evaluation

- Reflexive monitoring/ evaluation on the go/iterative development
- Bi-directional advisory board for energy access activities in collaboration with the NL Energy Compact
- Third party evaluation