



# BEYOND BOUNDARIES

Realising the UN Sustainable Development Goals

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For each  
Target:

**(B)** Is there published  
evidence of **synergies**  
or **tradeoffs** between  
Target and SDG7?

**All SDGs:  
Targets  
1.1 to 17.19**

**SDG 7:  
Affordable and  
clean energy**

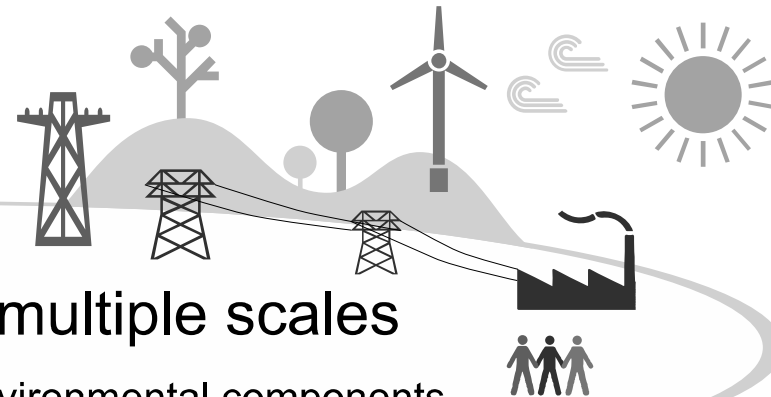
*Expert  
elicitation*

**(A)** Does the Target  
call for action in  
relation to energy  
systems?

*Qualitative  
content  
analysis*

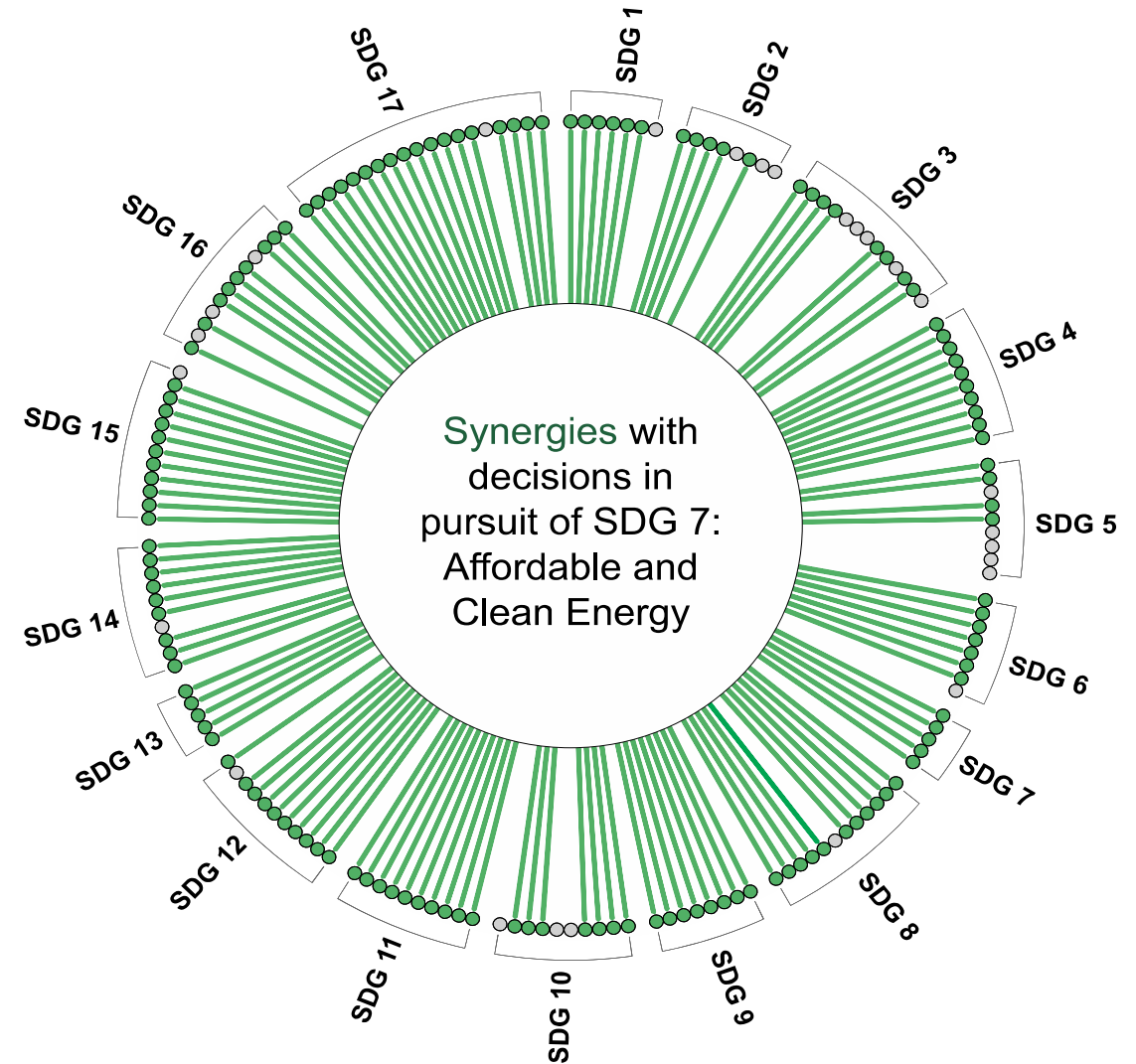
**Energy systems at multiple scales**

including anthropogenic and environmental components





**THE GLOBAL GOALS**  
For Sustainable Development



nature energy

PERSPECTIVE

<https://doi.org/10.1038/s41560-017-0036-5>

## Mapping synergies and trade-offs between energy and the Sustainable Development Goals

Francesco Fuso Nerini<sup>1,2\*</sup>, Julia Tomei<sup>3\*</sup>, Long Seng To<sup>4,5</sup>, Iwona Bisaga<sup>6</sup>, Priti Parikh<sup>6</sup>, Mairi Black<sup>4</sup>, Aiduan Borrión<sup>6</sup>, Catalina Spataru<sup>1</sup>, Vanesa Castán Broto<sup>7,8</sup>, Gabriel Anandarajah<sup>9,1</sup>, Ben Milligan<sup>9\*</sup> and Yacob Mulugetta<sup>4</sup>

## 143 Synergies

### WELFARE AND WELLBEING

Ending poverty & providing access to healthcare, education, water and sanitation

### INFRASTRUCTURES

Energy infrastructures needed for:

- Food & Water systems
- Medical facilities
- Sustainable cities

### ENVIRONMENT

Renewable and efficient energy will be needed to achieve environmental targets

## 65 trade-offs

Potential trade-offs with local communities resulting from projects related to the achievement of SDG7 (e.g. hydro, biomass)

Large infrastructure projects can have impacts on achieving several other SDGs

The provision of energy services for all by 2030 can impact climate change and local pollution



# Reflections

## KEY MESSAGE

- Energy systems are a **foundation of social and economic development**, and affect delivery of outcomes across all SDGs

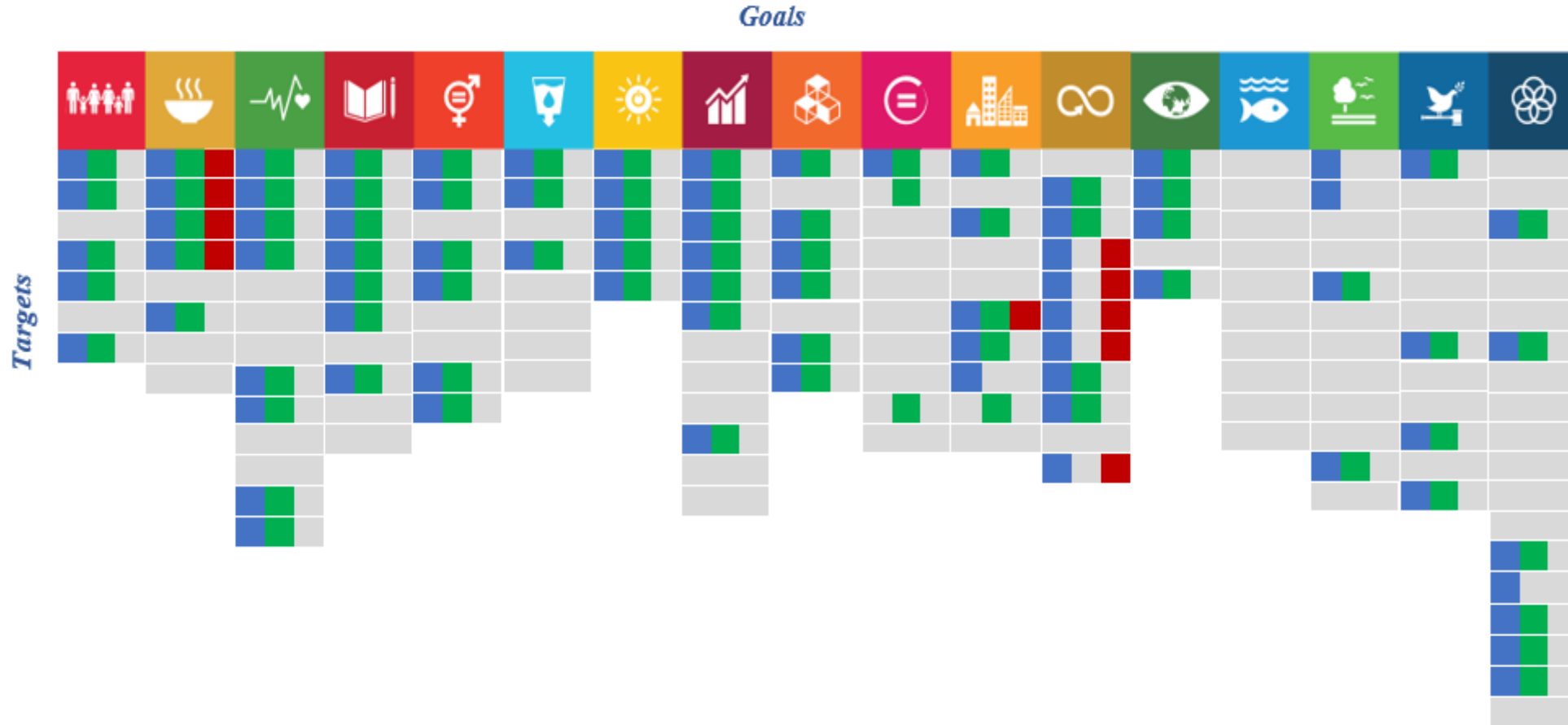
## FOR PRIVATE SECTOR

- **Supporting efforts** to achieve SDGs, responsible energy suppliers through improved access to modern energy services
- Promote equitable and fair energy distribution systems

## KEY QUESTIONS

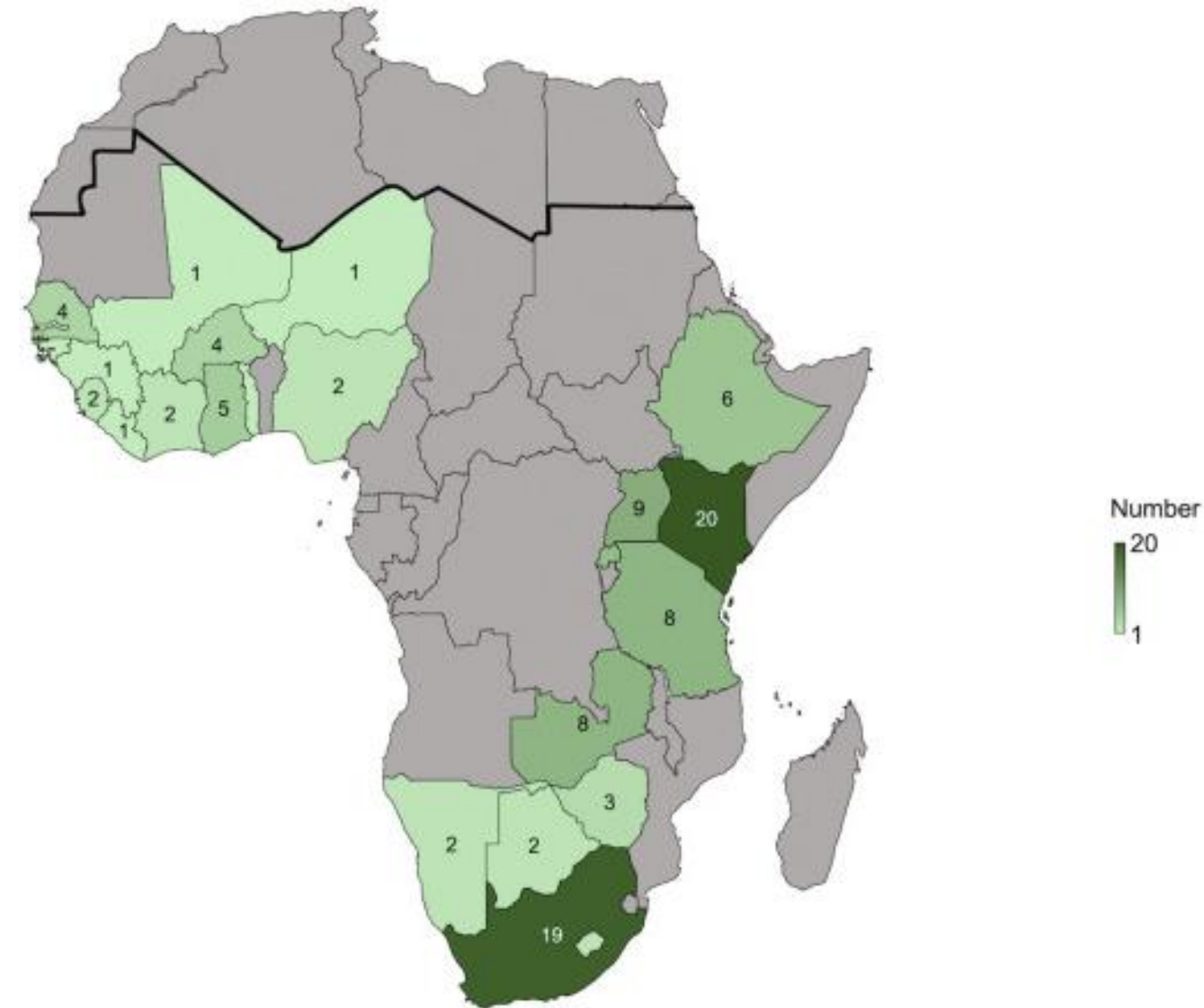
- How can academics work with the private sector to enhance access to affordable and clean energy services for all?

# SOLAR OFF-GRID SECTOR RWANDA



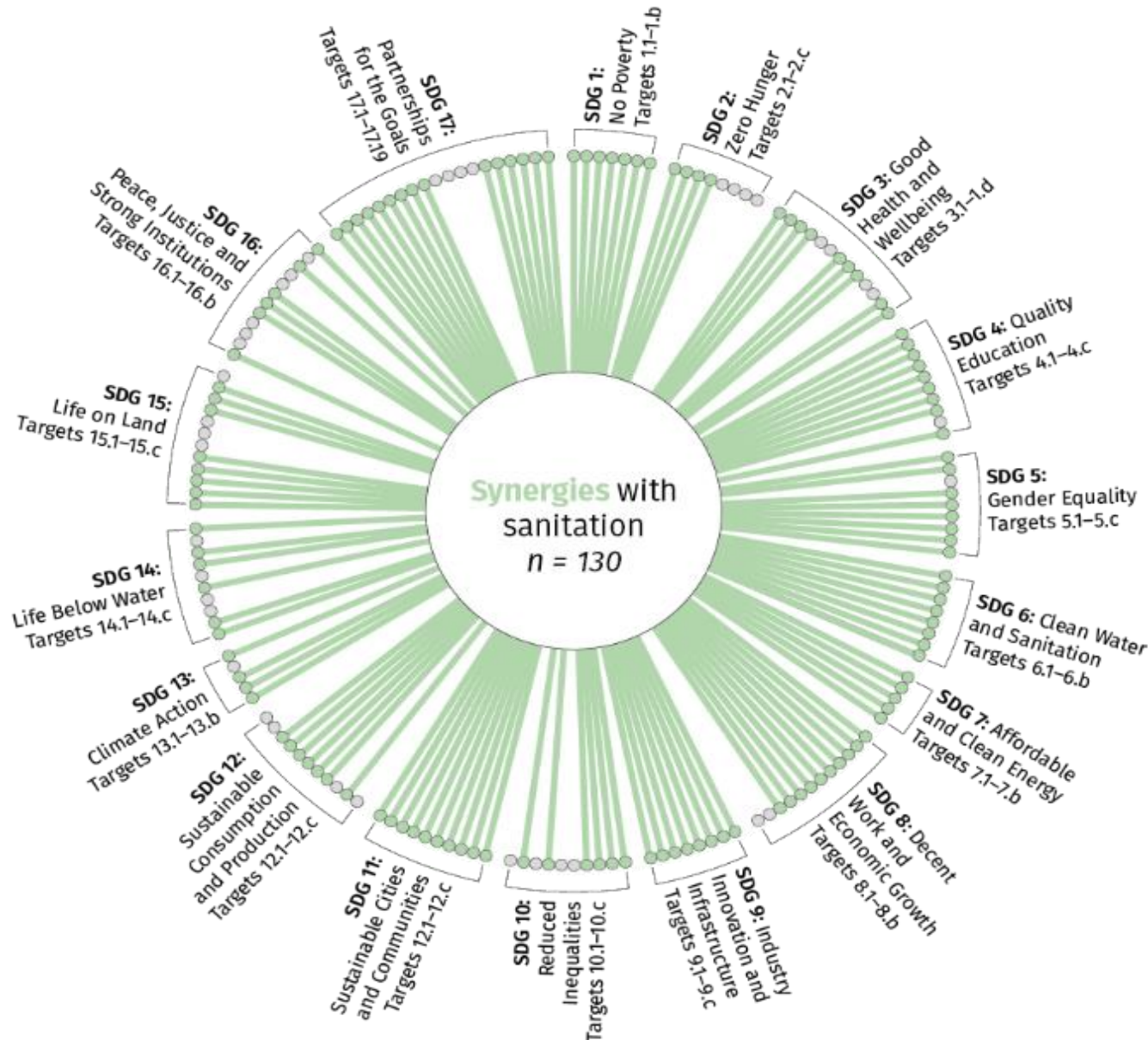
- Targets calling for action in relation to off-grid solar energy systems in Rwanda*
- Targets with evidence of synergies between the Target and decisions in pursuit of SDG7 with off-grid solar solutions in Rwanda*
- Targets with evidence of trade-offs between the Target and decisions in pursuit of SDG7 with off-grid solar solutions in Rwanda*
- Targets with no call for action and/or synergy and/or trade-off*

Source: Bisaga, Parikh, Tomei, Seng To (n.d.) Mapping Synergies and Trade-offs Between Energy and the Sustainable Development Goals: A Case Study of Off-Grid Solar Energy in Rwanda, submitted to Energy Policy



- Off-grid solutions required in SSA
- Gaps in off-grid solar research
- Nations with low electrification have less published research
- Lag between academia and private sector

# SDGs - Unifying Framework



**Achieve access to adequate, equitable and dignified sanitation and hygiene for all, paying attention to:**

- Safely managed facilities and services for handling and disposal of human urine and faeces along the sanitation chain
- Social diversity and inclusivity (including gender, age, disability, religion)
- Capacity-building of local communities
- Menstrual hygiene and baby wash
- Ending open defecation

Parikh, Diep, Hoffman, Tomei, Campos, Teh, Mulugetta, Milligan, Lakhnpaul (2020) Synergies and Trade-Offs between Sanitation and the Sustainable Development Goals, UCL Open Environment, <https://ucl.scienceopen.com/hosted-document?doi=10.14324/111.444/000054.v1>





- **Continue build the dataset with more published evidence**
- **More transdisciplinarity!**
- **Context-specific applications**
- **Monitoring & Evaluation tools**
- **Online platforms and visualisations**
- **Policy briefs**
- **Harmonise investment and actions in infrastructure**
- **Evidence-driven approaches**
- **Cross-sectoral collaborations, nodal agencies**