

Supplementary Material

Connecting the Sustainable Development Goals by their energy inter-linkages

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Search queries applied in Scopus in the second-stage systematic literature review

As described in the main manuscript, in our second-stage systematic review we initiated a set of structured keyword searches in Scopus. In particular, we constructed fifteen unique queries: one for each SDG (other than SDG7 and the “means of implementation” SDG17). These queries share a common taxonomy that always consists of four parts:

- **Entry point**: SDG7, thus using search terms like ‘energy’, ‘electricity’, ‘fuel’ and other context-related synonyms specific to a particular SDG (in order to distinguish direct vs. indirect or irrelevant relationships).
- **Search context**: sustainable development goals
- **Type of interaction**: synergies, trade-offs, and linkages, among other similar search terms
- **Sustainability dimension**: SDG ‘X’, thus using search terms specific to a particular SDG (derived from the UN’s official SDG target and indicator language, as well as the keywords identified through our first-stage expert identification procedure)

The table below gives the exact search strings used in each of the Scopus queries.

SDG	Overarching Aim	Query
Goal 1	End poverty in all its forms everywhere	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (poverty OR income) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 2	End Hunger, achieve food security and adequate nutrition for all and promote sustainable agriculture	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (hunger OR food OR *nutritio* OR agricul*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 3	Attain healthy life for all at all ages	TITLE-ABS-KEY (*energy OR electri* OR fuel OR "active travel") AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (health* OR mortality OR daly OR yoll OR "premature death*" OR "air poll*") AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 4	Provide equitable and inclusive quality education and life long learning opportunities for all	TITLE-ABS-KEY (*energy OR electri* OR fuel OR "room temperature") AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (educat* OR school* OR learn*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 5	Attain Gender equality, empower women and girls everywhere	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (gender* OR wom?n OR girl*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 6	Secure water and sanitation for a sustainable world	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (*water* OR sanitation OR hygiene) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 8	Promote strong, inclusive and sustainable economic growth and decent work for all	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (*growth* OR employment OR job*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 9	Promote sustainable industrialization	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (industr* OR infrastructur* OR innovat*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 10	Reduce inequality within and among countries	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (*equal* OR inclus* OR *discrim* OR *empower*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 11	Build inclusive, safe and sustainable cities and human settlements	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (city OR cities OR urban OR settlement* OR "public transport*") AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 12	Promote sustainable consumption and production patterns	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (consumption OR production OR "life?cycle" OR waste* OR "recycl*" OR subsid*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 13	Promote actions at all levels to address climate change/build climate change goal based on COP 21 of the UNFCCC	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (climat*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 14	Attain conservation and sustainable use of marine resources and seas	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (marine OR sea* OR ocean OR coast*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 15	Protect and restore terrestrial ecosystems and halt all biodiversity loss	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (ecosystem* OR biodiversity OR *forestation OR *land*) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)
Goal 16	Achieve peaceful and inclusive societies, rule of law, effective and capable institutions	TITLE-ABS-KEY (*energy OR electri* OR fuel) AND TITLE-ABS-KEY (sdg* OR "sustainable development goal*") AND TITLE-ABS-KEY (peace* OR violen* OR institution* OR corrupt* OR law* OR crime* OR justice OR war) AND TITLE-ABS-KEY (synerg* OR impact* OR trade-off* OR interact* OR *benefit* OR *effect* OR indirect OR *link*)

Filtering criteria applied to the search results obtained from Scopus

Of the 823 unique search results obtained from Scopus across the full suite of relevant SDGs, 100 potentially relevant studies papers were deemed worthy of carrying forward for deeper consideration (based on their abstracts). A large set of these studies were subsequently excluded (based on reading the full papers), leaving us with a final set of studies to be included in our paper. This second-stage systematic review process thus complemented the references identified based on the first-stage internal expert elicitation exercise. Importantly, during both review rounds of the second-stage review, multiple author team members used a shared set of criteria to determine which papers to exclude. These criteria, which were informed primarily from the first-stage expert elicitation process, are listed below.

Studies were excluded if they...

- Lacked a strong focus on energy (in the sense of energy technologies and policies).
- Discussed different SDG dimensions but stopped short of describing the inter-linkages between them.
- Dealt more with the “means of implementation” of the SDGs rather than the interactions between them.
- Were overly technology- or location-specific (unless such papers made generalizable points on SDG interactions that could not be found in more systems-style studies).
- Described methodologies that could ‘potentially’ be utilized for analyzing SDG interactions or were merely opinion pieces.
- Dealt with a wholly different type of “SDG” (i.e., a false positive for this not-entirely-unique acronym).
- Were not available in English.
- Could not be accessed via online repositories or via inter-library loan.