

Energy Efficiency and Its Contribution to the Green Transition and Global Sustainable Development Goals

Ana Todorova, Irina Kostadinova, Elena Fleaca, Theodora Mihaela Doltu

University of Ruse “Angel Kanchev”, attodorova@uni-ruse.bg

GOAL OF THE STUDY

Globalisation is transforming the world into a connected global village, reshaping national economies and resource use.

This study explores energy efficiency as a key driver of the green transition and the UN Sustainable Development Goals, analysing its impact on economic growth, social inclusion, and environmental sustainability.

METHODOLOGY



The study uses a systematic review and conceptual analysis of scientific publications and institutional sources (UN, IEA, World Bank, Eurostat).

A methodological model has been developed that links EE (Energy Efficiency) with Goal 7 (“Affordable and Clean Energy”) and the other 16 SDGs through economic, social and environmental interlinkages. The method includes five steps:

(1) Comprehensive assessment and planning, (2) Integrated policies, (3) Mobilising investments, (4) Capacity building and education, (5) Monitoring and adaptive management.

RESULTS

- ✓ Improving EE has a positive impact on all SDGs, especially on poverty eradication, health, education, equality and climate action.
- ✓ Investments in EE lead to optimal use of resources and a high multiplier effect – one measure supports several goals at the same time.
- ✓ Coordinated policies and financial support are needed for developing countries, where the pace of energy transformation is lagging behind.

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Energy efficiency and the green transition are key pillars for achieving the SDGs. The current fossil fuel-based model is unsustainable, driving climate change, pollution, inequality, and energy poverty (Fig. 1).

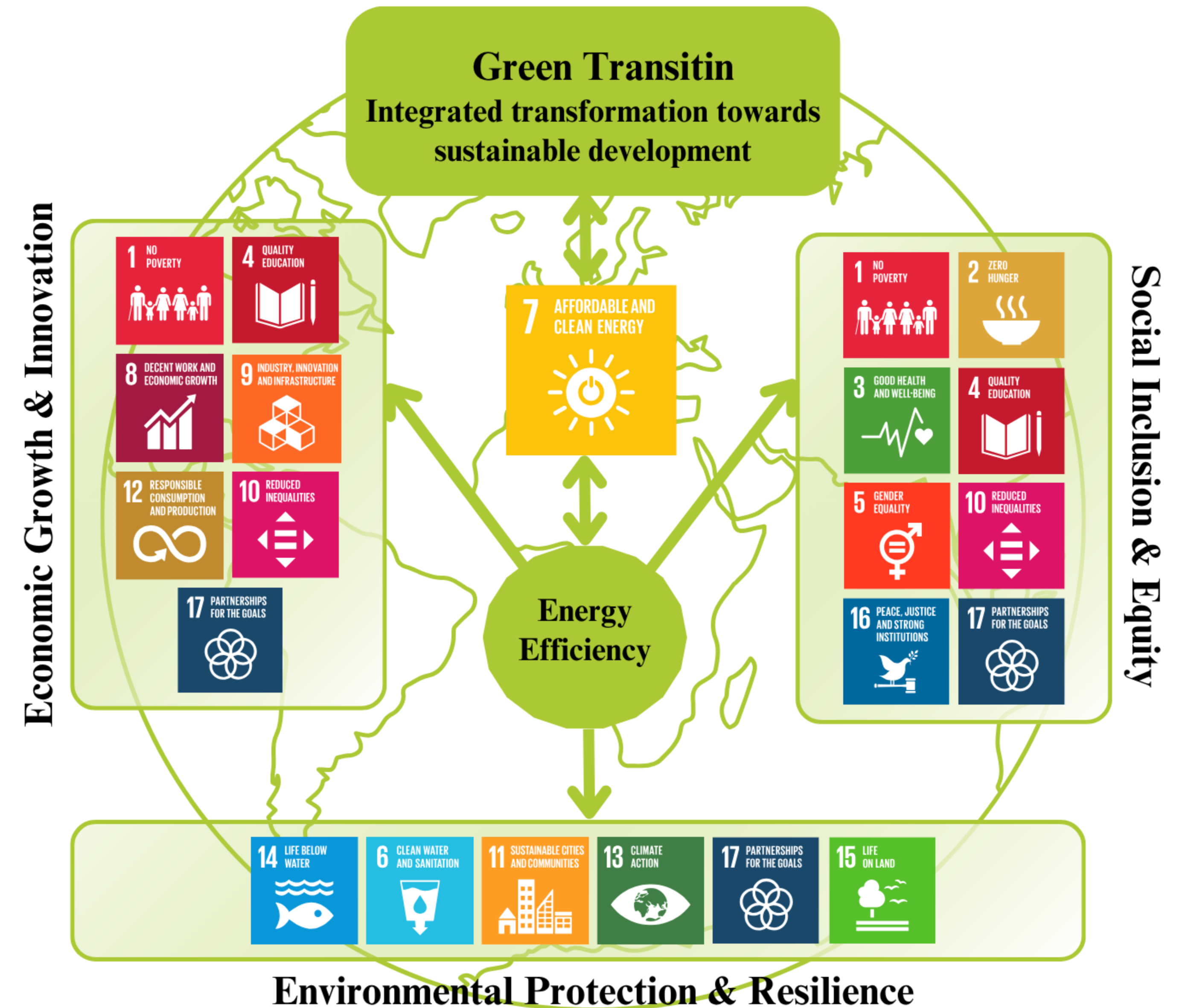


Fig. 1. Flow chart with links between *Energy efficiency* → *SDG7* → *SDGs* → *Green Transformation*.

Source: Own development

- **Linkages between SDG 7 and other goals reveal strong synergies.** Energy-efficient buildings and clean energy reduce emissions (SDG 13), improve health (SDG 3), cut costs (SDG 1), create jobs (SDG 8), and support sustainable cities (SDG 11).
- Access to clean energy also alleviates energy poverty, advancing education (SDG 4) and gender equality (SDG 5).

CONCLUSIONS

- 🌀 EE is the most cost-effective and rapid mechanism for reducing emissions and accelerating sustainable development.
- 🌀 It is not just a technical measure, but a strategic tool for a just transition and for linking economic growth with environmental protection.
- 🌀 The success of the GT requires an integrated approach, international cooperation and educational reforms to ensure that no one is left behind in the transition to a sustainable energy system.