

The Global Network of Regional Sustainable Energy Centres (GN-SEC) Program

A "New Deal" for Integrated and Inclusive Sustainable Energy and Climate Technology Markets



A. The SDG-9 dimension of SDG-7 and SDG-13

With the SDGs, the global community has committed to work towards a new global business model that allows producing more of the goods and services required by a growing world population, while using fewer resources and producing less waste and pollution. There is a trend towards circular economy policy concepts against the background of the increasing scarcity and price volatility of raw materials, including fossil fuels, as well as the need to internalize the costs of environmental externalities, such as air, soil and water pollution and climate change caused by global greenhouse gas emissions.

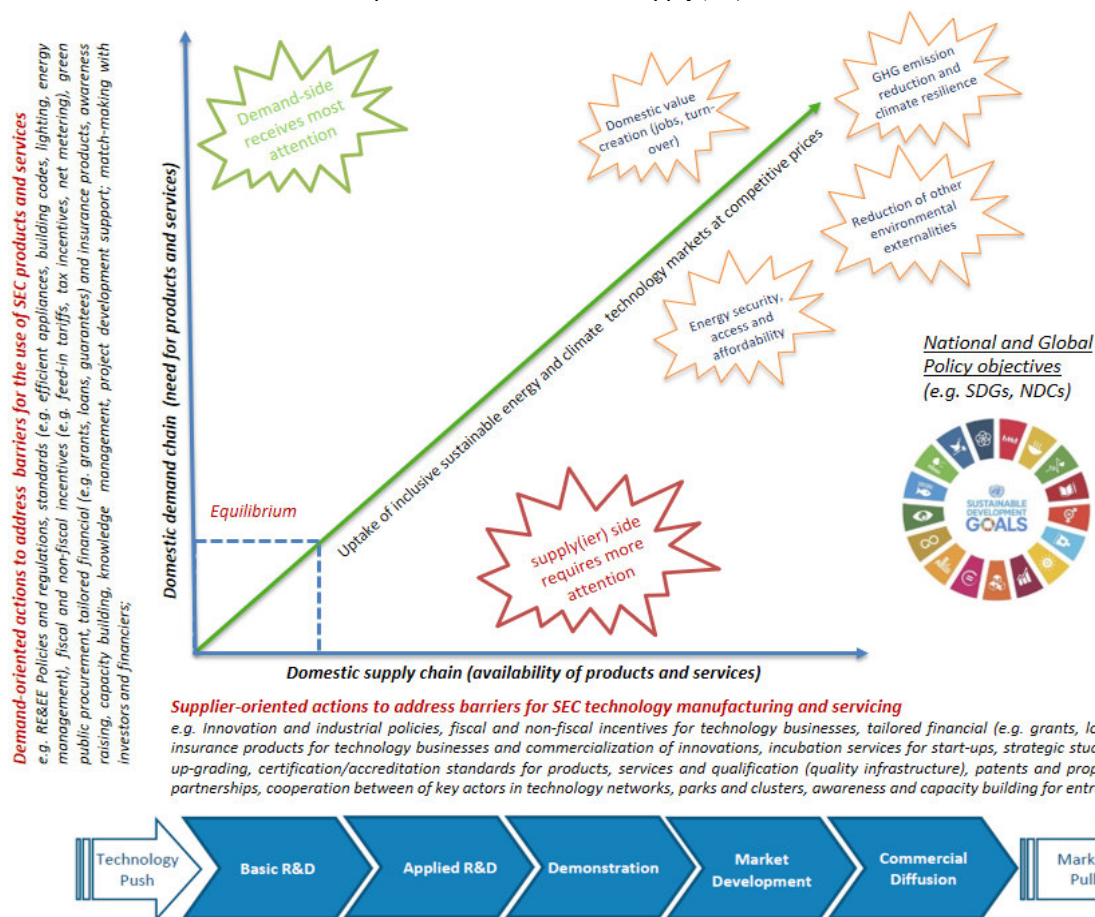
The deployment of sustainable energy and climate technologies (SECTs) is considered as an effective tool to tackle economic/industrial productivity and competitiveness, energy security, energy access/affordability and negative externalities of conventional energy systems (e.g. GHG emissions, local pollution) simultaneously and in an integrated way. In this context, also developing countries have introduced far-reaching targets for scaling-up SECT markets (e.g. NDCs) throughout the next decades. Most of these efforts are closely aligned with economic, industrial and environmental policies targeting increased competitiveness, productivity, inclusiveness, sustainability and resilience to climate change impacts.

Despite growing investments over the past decade, SECTs markets have not reached economies of scale particularly in least developed countries (LDCs) and small island developing states (SIDS). In the energy sector, the deployment of renewable energy and energy efficiency solutions remains hindered by a broad range of barriers and shortcomings related to policy and regulation, fiscal and non-fiscal incentives, technical limitations, economics, finance, capacity, quality infrastructure, R&D and innovation frameworks, knowledge and awareness.

Moreover, in a number of developing countries the inability of the domestic private sector to supply sustainable energy quality products and services under competitive prices has become a bottleneck for the uptake of SECT markets. The domestic manufacturing and servicing sector remains weakly developed and the growing demand remains underserved by international suppliers and supply chains due to high market entry costs and risks. Moreover, policies and technology transfer programs tend to focus on creating demand for SECT products and services and tend to ignore supplier-oriented actions focused on strengthening domestic innovation systems, productive industrial capacities and entrepreneurship.

Such trends raise concerns regarding the inclusiveness of technology transfer processes. This offers opportunities, but also bears the risk that the local value and job creation effects of such investments remain low and are not sustained in the long-run. Particularly in LDCs and SIDS even basic equipment and services (e.g. consulting, energy auditing, installation, maintenance) continue to be imported. The absence of domestic suppliers and service providers questions the long-term sustainability of already undertaken renewable energy investments in various developing countries (e.g. lessons learned from mini-grids and public solar lighting projects in Sub-Sahara Africa). The lack of domestic R&D and entrepreneurship hinders the commercialisation of SECT solutions adapted to the realities of LDCs and SIDS.

Figure 1: UNIDO theory of change: The uptake of inclusive SECT markets in developing countries requires equal emphasis on demand- and supply(ier)-side actions



B. Regional cooperation as missing link in the sustainable energy and climate transformation

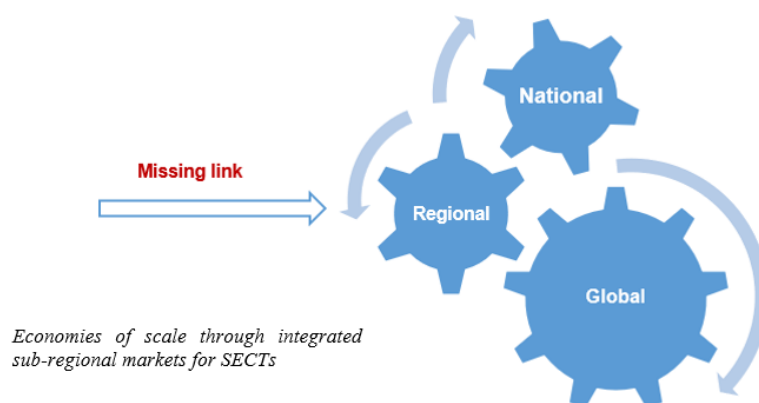
By looking at the moderate growth rates of Sustainable Energy and Climate Technology (SECT) markets in a number of developing countries, it becomes obvious that SDG-7, SDG-9 and SDG-13 cannot be attained by 2030 in business-as-usual scenarios. Markets for SECTs products and services remain often small and fragmented. There is need for economies of scale and speed. In this context, formal, informal, centralised and decentralized multi-stakeholder partnerships - leveraging flexible networks and resources between a broad range of like-minded partners in developing and developed countries – can become important accelerators.

Regional partnerships, cooperation and integration between countries, private sector and civil society can be an effective tool to address some of the existing demand and supply barriers for SECT market development. Integrated markets, which follow joint standards and a common framework, are an important prerequisite for

the reduction of investment risks and the uptake of trade with SECTs products and services. However, for several reasons, the regional level is ignored and remains a missing link in the international sustainable energy and climate cooperation. It is not used systematically as a (cost-)effective tool to promote equal progress, coordination and economies of scales.

Regionally, the energy transformation tends to remain uncoordinated between countries and common barriers and opportunities are not addressed jointly for the benefit of all. Duplication, fragmentation and lack of agenda-setting by the region lead often to inefficient use of international funding and opportunity costs. Simultaneously, global climate agreements and funding instruments face implementation challenges due to the limited national absorption capacities and the absence of regional arrangements.

Figure 2: Regional cooperation as the missing link in the international sustainable energy and climate cooperation



In many parts of the developing world, the institutional capacities to coordinate and promote regional sustainable energy cooperation and integration are weakly developed. The traditional regional organisations/communities (RECs) and their energy institutions (e.g. regional utility organisations and regulators) are dealing with wider energy and/or interconnection issues and focus often more on traditional energy sources (e.g. gas, coal, large hydro). In most cases, regional organisations lack of resources and capacities to overlook and monitor complex political and technical sustainable energy policy and implementation processes.

C. The Global Network of Regional Sustainable Energy Centres (GN-SEC) – Addressing the missing link

C.1. Evolution of the network

To make regional sustainable energy and climate cooperation/integration a priority, UNIDO launched the Global Network of Regional Sustainable Energy Centres (GN-SEC) Programme. Under a common framework, UNIDO assists regional organisations in the creation and operation of sustainable energy centres. The GN-SEC is an innovative south-south and triangular multi-stakeholder partnership to accelerate the energy and climate transformation in developing countries.

The gradually expanding partnership comprises a sub-network of centres for the African and the Arab region (in cooperation with the EAC, SADC, ECOWAS, and the Arab League) and a sub-network for Small Island Developing States (in cooperation with SIDS DOCK, CARICOM, and SPC). Currently, the network is expanding to Central America, Central Asia and the Himalaya-Hindukush region. Since the very beginning, the Austrian Development Cooperation (ADC) and the Spanish Agency for International Development (AECID) provides

funding for this global institutional process. Several other EU and international partners have started to implement programs and projects in cooperation with the centres.

Operating Centres:

- [ECOWAS Centre for Renewable Energy and Energy Efficiency \(ECREEE\)](#) in partnership with [ECOWAS](#)
- [Regional Centre for Renewable Energy and Energy Efficiency \(RCREEE\)](#) in partnership with the Arab League
- [SADC Centre for Renewable Energy and Energy Efficiency \(SACREEE\)](#) in partnership with [SADC](#)
- [East African Centre for Renewable Energy and Energy Efficiency \(EACREEE\)](#) in partnership with [EAC](#)
- [Pacific Centre for Renewable Energy and Energy Efficiency \(PCREEE\)](#) in partnership with [SPC](#) and [SIDS DOCK](#)
- [Caribbean Centre for Renewable Energy and Energy Efficiency \(CCREEE\)](#) in partnership with [CARICOM](#)
- [Renewable Energy and Energy Efficiency Capacity for the Hindu Kush Himalaya \(REEECH\)](#), in partnership with [ICIMOD](#)
- [SICA Centre for Renewable Energy and Energy Efficiency \(SICREEE\)](#), in partnership with [SICA](#)

Centres in the preparatory phase:

- ECO Clean Energy Centre (ECEC), in partnership with [ECO](#)
- Centre for Renewable Energy and Energy Efficiency for Central Africa (CEREAC) in partnership with [ECCAS](#)

Figure 3: GN-SEC Centres



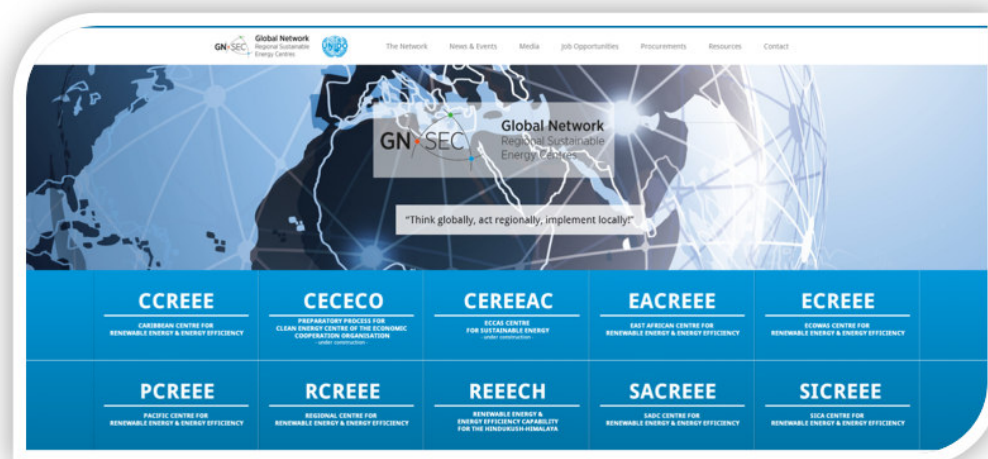
C.2. The GN-SEC Platform

The GN-SEC is currently becoming a formalized global platform to advocate for SDG-7, SDG-9 and SDG-13 and joint interests in international policy processes. The platform is hosted by UNIDO in Vienna, Austria, and meets regularly. It provides also a "virtual" maker-space for south-south cooperation activities and joint project proposals. For example, SIDS share similar challenges and opportunities when it comes to electric mobility and storage solutions. LDCs in Sub Sahara Africa share a common interest in renewable energy (hybrid) mini-grid development for rural electrification and productive uses. The platform provides a forum to exchange experiences and lessons learned on methodologies related to regional cooperation and institution building.

Figure 4: The GN-SEC Platform

GN-SEC Platform for south-south and triangular cooperation

We work more than 24 hours for the energy and climate transition!



A platform for joint:

- coordination
- learning
- projects
- campaigns
- tools
- knowledge sharing
- fund raising



South-south cooperation on issues and solutions of joint interest (e.g. e-mobility, storage, digitalisation, gender)

C.3. The mission of the GN-SEC network

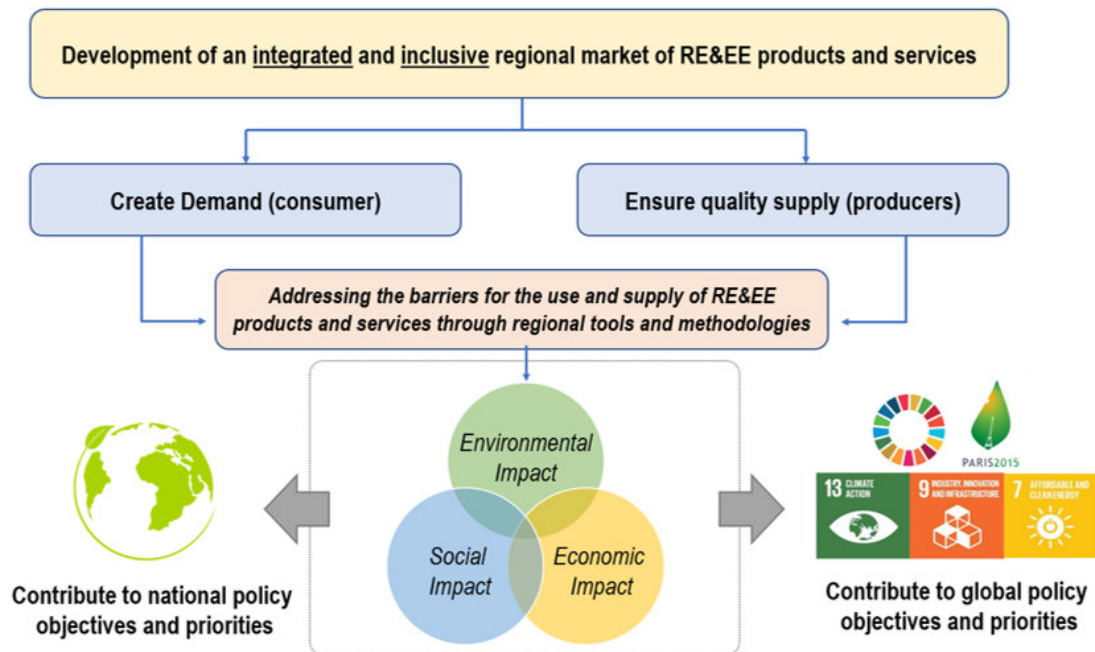
The regional sustainable energy centres aim to accelerate the energy and climate transformation by creating economies of scales, equal progress and spill-over effects between countries. In partnership with Member States and other sub-regional players (e.g. power pools, utility organisations, regulatory authorities, regional banks), the centres work towards the creation of integrated and inclusive regional markets for SECT products and services. This is being done by setting common targets, policies, standards and incentives, as well as the de-risking of investments through the provision of reliable data, analytics, bundling of projects and convening power. Each of the centres has its own priorities depending on the demands of member states.

Some of the barriers for the development of SECT markets can be addressed more effectively and at lower cost at sub-regional level. The GN-SEC centres play an important role in setting domestic priorities, contribute to donor harmonisation and coordination, as well as ensuring the sustainability and availability of results and deliverables after project closure. The centres provide regional organisations with the urgently needed technical capacities to coordinate and monitor the implementation of sub-regional energy and climate policies/regulations on national level. Moreover, the GN-SEC centres serve as knowledge resource facility, and provide advice to Member States on how best to manage the transition towards sustainable energy.

Through cross-border approaches and methodologies, the centres complement and accelerate national efforts in the areas of policy and regulation, capacity development, knowledge and data management, awareness raising, as well as the promotion of investment, innovation and entrepreneurship. The centres serve as a hub for all kind of domestic and international partnerships. They are important advocates for SDG-7, SDG-9 and SDG-13 in national, regional and international policy and decision-making processes. They can complement regional banks when it comes to the addressing of “soft” issues hindering the de-risking and long-term sustainability of investments (e.g. policy, standards, laws, qualification, certification). These issues have usually too high transaction costs for banks and/or lead to unfavourable financing terms (e.g. interest rates).

Figure 5: GN-SEC Mission and Vision

GN-SEC Mission and Vision



The GN-SEC centres aim at an equilibrium between market demand for and supply of SECT products and services. They put particular emphasis on actions directed to increase the domestic value creation of investments in SECTs. In this context, the centres focus on sub-regional actions to strengthen the productive (manufacturing, assembling, servicing) and innovation capacities of domestic businesses and entrepreneurs (e.g. fiscal and non-fiscal incentives, incubation, acceleration, R&D, quality infrastructure and standards, qualification, IPs, cluster building).

Figure 6: GN-SEC intervention logic

Introduction of innovative RE&EE products and services in emerging markets

Regional cooperation to address demand and supply-side barriers



Potential joint CPLP activities!

Supporting the diffusion of new low-carbon technologies and business models



Examples: e-mobility, digitalisation and industry 4.0 solutions

Towards low-carbon sustainable energy systems and infrastructure

C.4 The GN-SEC principles

GN-SEC means "living empowerment". The centres are advocates for a "New Deal" giving particularly LDCs and SIDS a stronger voice in shaping climate and technology transfer processes. The official mandate given by Ministers and Head of States, the intergovernmental character (based on int. agreements) and the close link to the RECs and national Ministries (through national focal points) give the centres high-level legitimacy. Currently, over ninety Ministers of Energy and/or Heads of State adopted the creation of such centres.

From the very beginning, the centres are in the ownership and under the leadership of the respective regional organization and its Member States. The centres are well embedded in the regional decision-making structure and report usually to the RECs and their Member States. The centres employ domestic staff and seconded international experts. The centres are designed as hubs for all kind of domestic and international partnerships. Building on country leadership within existing regional cooperation entities, the network puts the key principles of aid and development effectiveness (as defined in the Accra, Paris and Busan Declarations) into practice: It respects country ownership of development priorities coupled with results-oriented partnerships, transparency and shared responsibility.

Under the umbrella of the GN-SEC platform, UNIDO provides technical services for the establishment and operation of these centres throughout the preparatory and first operational phase. UNIDO acts also as facilitator and neutral moderator of the complex political process and dialogue between the Member States and the RECs. The RECs and their Member States are the owner of the progress and decide on the pace. It is envisaged that after the first operational phase the centres have reached self-sufficiency and UNIDO is becoming a technical partner like many others.

The GN-SEC model builds on already ongoing integration processes in the respective regions, lessons learned with the creation of similar technology centres (e.g. solar, hydro, hydrogen, biotechnology, Global Network of Resource Efficient and Cleaner Production Centres) and general integration theories and tools (e.g. European Integration).

GN-SEC key principles:

- Programmatic approach (individual centres are part of a wider program);
- Demand-driven (based on requests by the regions);
- „No blueprints“ and tailored design to the individual needs and culture of the sub-region;
- Ownership and leadership by the regional organisation and their Member States;
- Hosted by an existing domestic institution or a Member State;
- High level of legitimacy and intergovernmental character (approved by Ministers and/or Heads of States);
- Well embedded in sub-regional decision-making and policy processes;
- Well-connected to national Ministries and policies through a network of national focal institutions;
- Work complementary to the existing sub-regional institutions (e.g. RECs, utility organizations, regulatory authorities, associations);
- Use of domestic processes and systems (e.g. procurement, recruitment, financing and accounting);
- Financial sustainability through domestic contributions, international partnerships, fee-for-services and participation in call for proposals;
- „Small is beautiful“ and „form follows function“ - centres expand based on mobilized resources;
- Institutional "check and balances" through governance bodies (e.g. Executive Board, Technical Committee);
- Timely-limited UNIDO support for institution building, technical program development and mentoring of the political process;

GN-SEC Program Contact:

Mr. Martin Lugmayr, UNIDO Department of Energy

E-Mail: info@gn-sec.net

Website: www.gn-sec.net

Core Donors:

