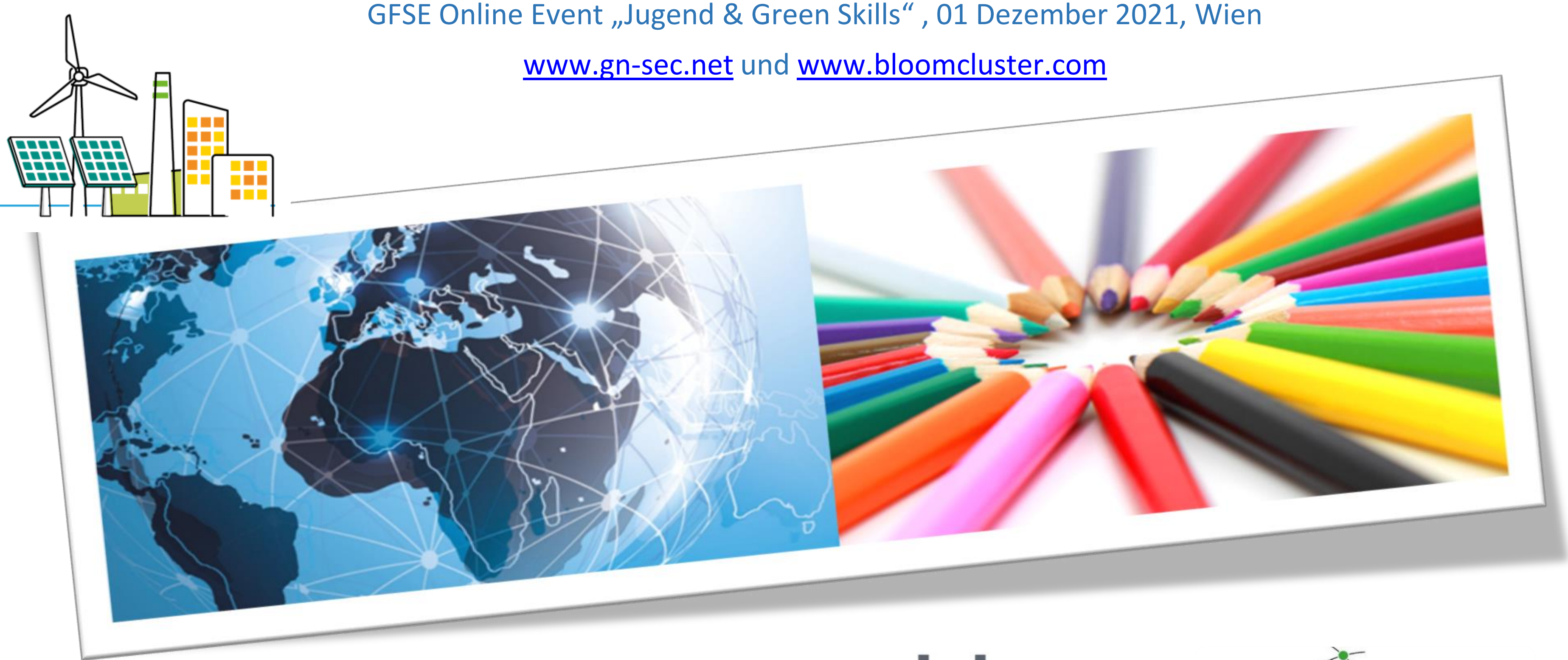
Auf der Suche nach Abenteuer?
Finde deine Weg in die grüne “Mission Impossible”

Martin Lugmayr, Energieabteilung, UNIDO
GFSE Online Event „Jugend & Green Skills“ , 01 Dezember 2021, Wien

www.gn-sec.net und www.bloomcluster.com



bloom
Regional Clean Tech Cluster Program

GN-SEC Global Network
Regional Sustainable
Energy Centres

Inhalt der Präsentation

- Globale Perspektive
- BLOOM Cluster Programm
- Barbados BLOOM Cluster

DECADE OF >>> ACTION

UNIDO im Fokus

UNIDO
was established in **1966** and became a specialized agency of the United Nations in 1985

As at 31 December 2019, the Organization has **170 Member States**

LI Yong
has been the Director General of UNIDO since June 2013, and was reappointed for a second four-year term by the General Conference in November 2017.

€84.1 million
regular and operational budget (expenditure) of UNIDO in 2019

43% 57%

UNIDO employs
671 staff members as well as 1,426 consultants on ISA contracts from 139 countries (as at 31 December 2019)

The primary objective is the promotion of
INCLUSIVE AND SUSTAINABLE INDUSTRIAL DEVELOPMENT (ISID)
in developing countries and economies in transition

ADVANCING ECONOMIC COMPETITIVENESS

ISID

CREATING SHARED PROSPERITY

SAFEGUARDING THE ENVIRONMENT

STRENGTHENING KNOWLEDGE AND INSTITUTIONS

- TECHNICAL COOPERATION
- ANALYTICAL AND POLICY ADVISORY SERVICES
- NORMATIVE FUNCTIONS, STANDARDS AND QUALITY-RELATED ACTIVITIES
- CONVENING FOR KNOWLEDGE TRANSFERS, PARTNERSHIPS AND NETWORKING

UNIDO im Fokus

In addition to its Headquarters in **Vienna**, UNIDO has liaison offices in **Brussels, Geneva** and **New York**.

Its field network consists of **48** regional hubs, and regional and country offices covering **156** countries.

UNIDO maintains **Investment and Technology Promotion Offices** in **9** locations (Beijing, Bonn, Lagos, Manama, Moscow, Rome, Seoul, Shanghai and Tokyo). **Regional sustainable energy centres** exist in **8** locations (Bridgetown, Cairo, Kampala, Kathmandu, Nuku'alofa, Praia, San Salvador and Windhoek). UNIDO partners with **65 National Cleaner Production Centres** of the Global Network for Resource Efficient and Cleaner Production (RECPnet).

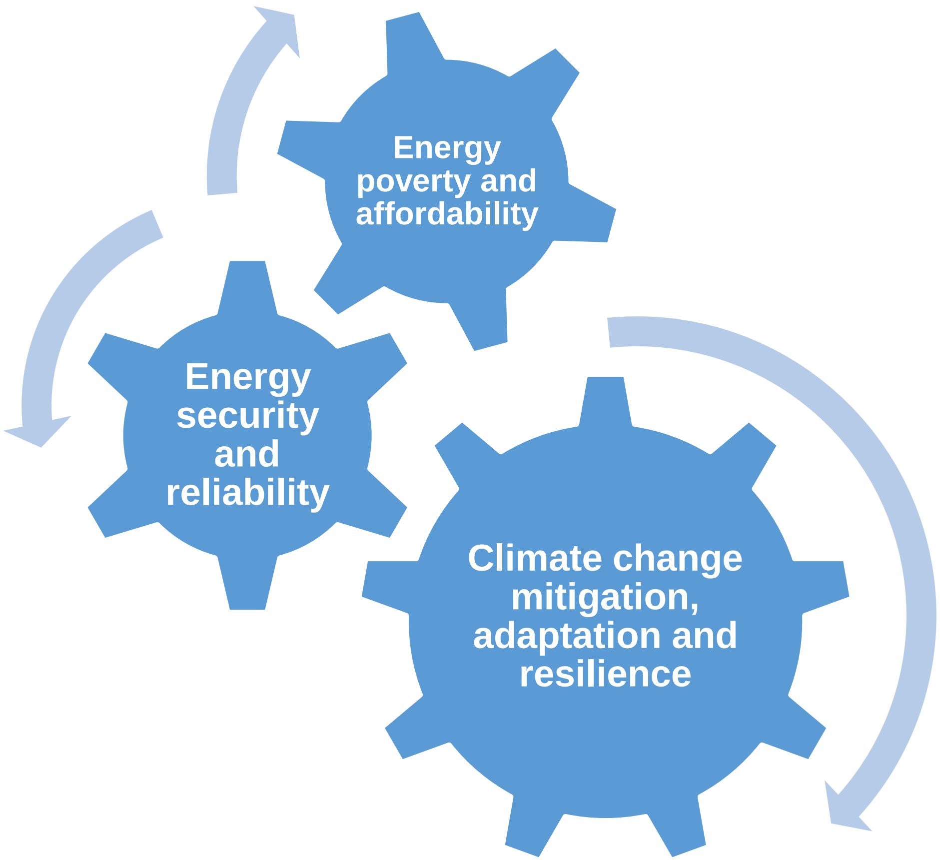
The value of **technical cooperation delivery** in 2019 amounted to **$190.3 million**

$154.7 million net **voluntary contributions** in 2019 for project implementation, with a total portfolio of projects in hand of **$586.6 million**

Projects implemented in **125 countries** in 2019

UNIDO participates in **81 United Nations country teams** (2019)

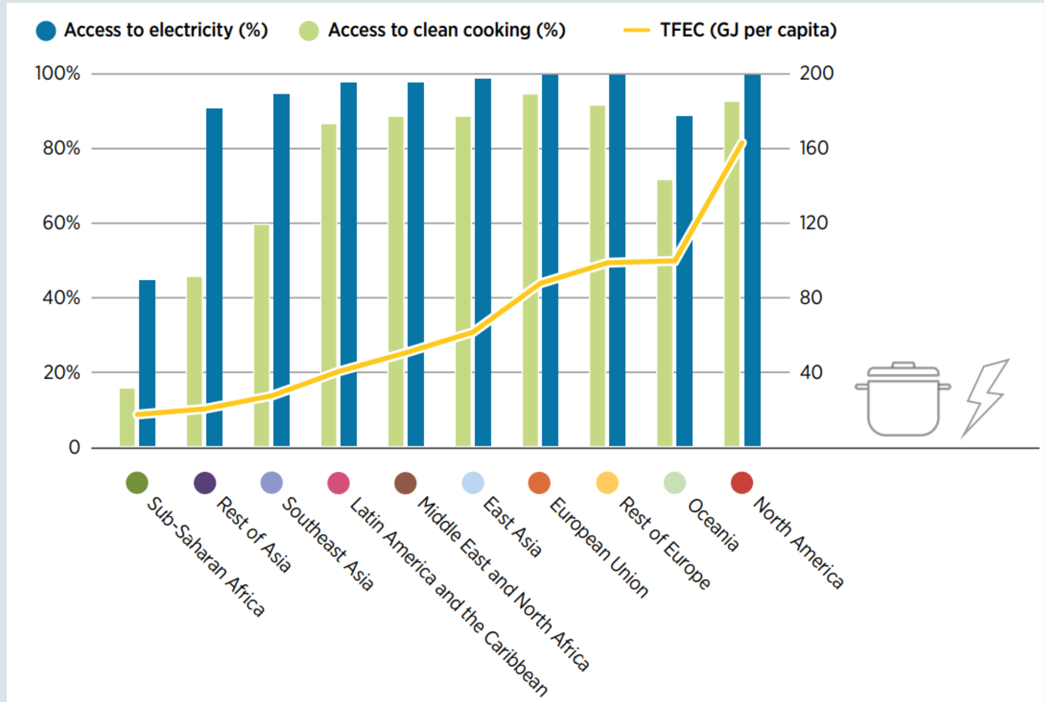
Globale Herausforderungen im Energiesektor als grüne Investitions- und Geschäftschancen



Expandierendes Investitions- und Arbeitsfeld in Schwellen- und Entwicklungsländern!

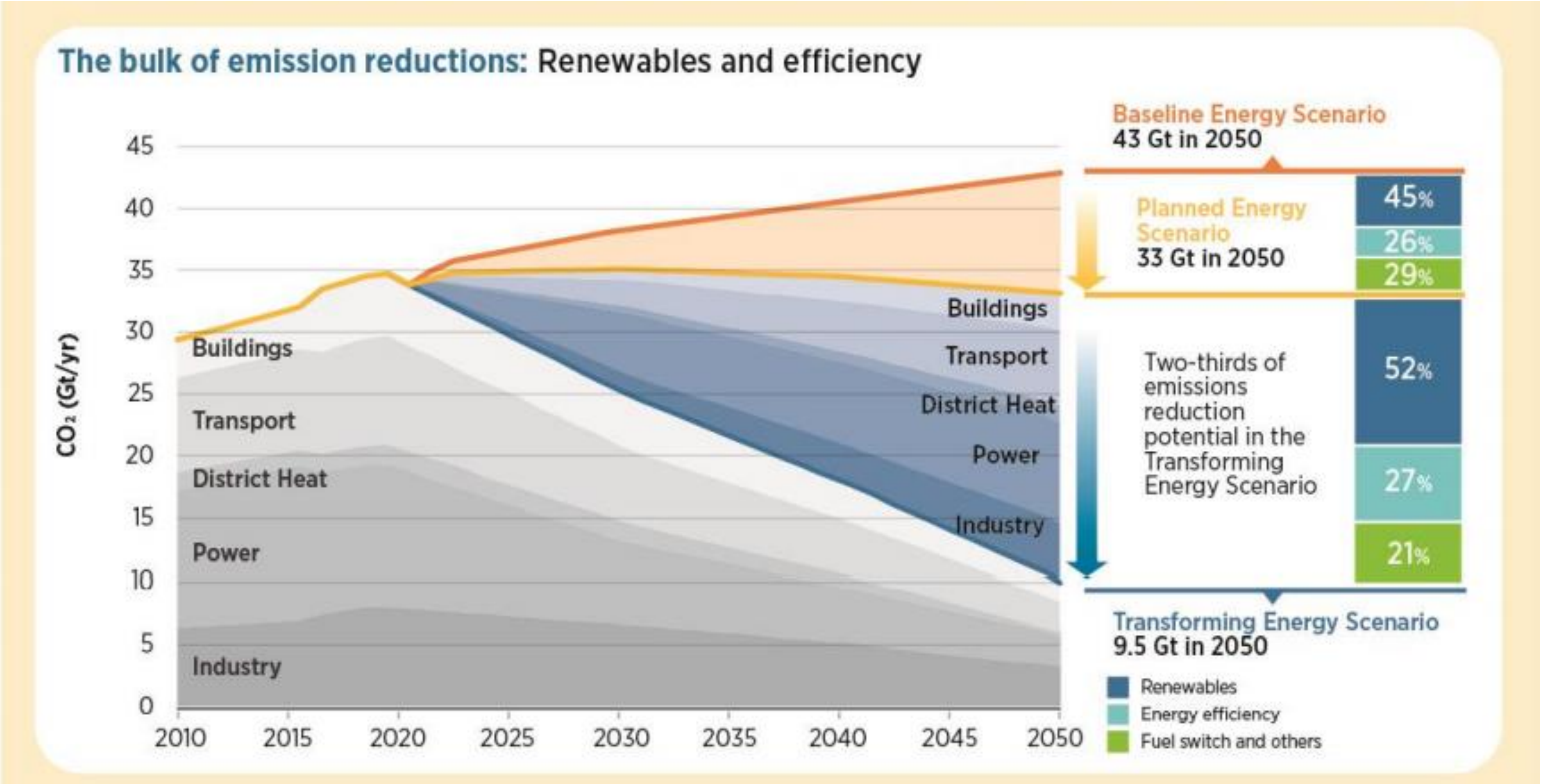
Investitionen in Infrastrukture von heute entscheiden Zukunft in 20 Jahren!

Figure 3.3 Energy consumption per capita: Rising in step with wealth and access
Energy consumption per capita and access to clean cooking and electricity



Note: Access to electricity, 2017 values (World Bank Group, 2019b), access to clean cooking, 2016 values (World Bank Group, 2019c), TFEC, 2017 values (IEA, 2019b).

Weg aus der Klimakrise bis 2050 – Mission Impossible?



Gobale Klima- und Energiewende bis 2050

Figure S.3. An increasingly electrified energy system

Renewable electricity share in electricity generation, electrification share, and select technologies

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Indicator	Historical progress 2015-2018/2019		Where we are heading (PES/2030 and 2050)		Where we need to be (TES/2030 and 2050)	
Renewable share in electricity generation (%)	23% (2015)	26% (2018)	38% (2030)	55% (2050)	57% (2030)	86% (2050)
Electrification share of final energy (%)	19% (2015)	20% (2017)	24% (2030)	30% (2050)	29% (2030)	49% (2050)
Technologies						
Electric cars (mln units)	1.2 mln (2015)	7.9 mln (2019e)	269 mln (2030)	627 mln (2050)	379 mln (2030)	1 109 mln (2050)
Heat pumps (mln units)	20 mln (2017)	38 mln (2019e)	63 mln (2030)	119 mln (2050)	155 mln (2030)	334 mln (2050)

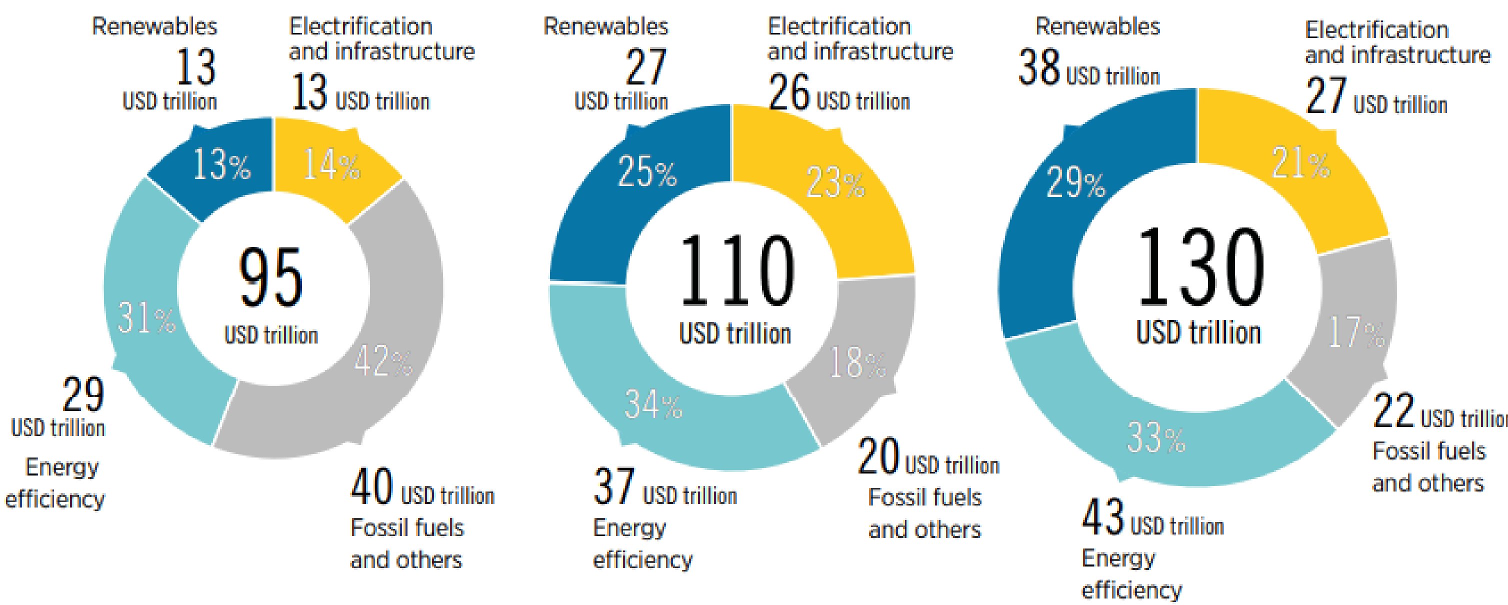
Grünes Investitionszenario bis 2050

Renewables, efficiency and electrification of heat and transport

Planned Energy Scenario cumulative investments between 2016 and 2050 (USD trillion)

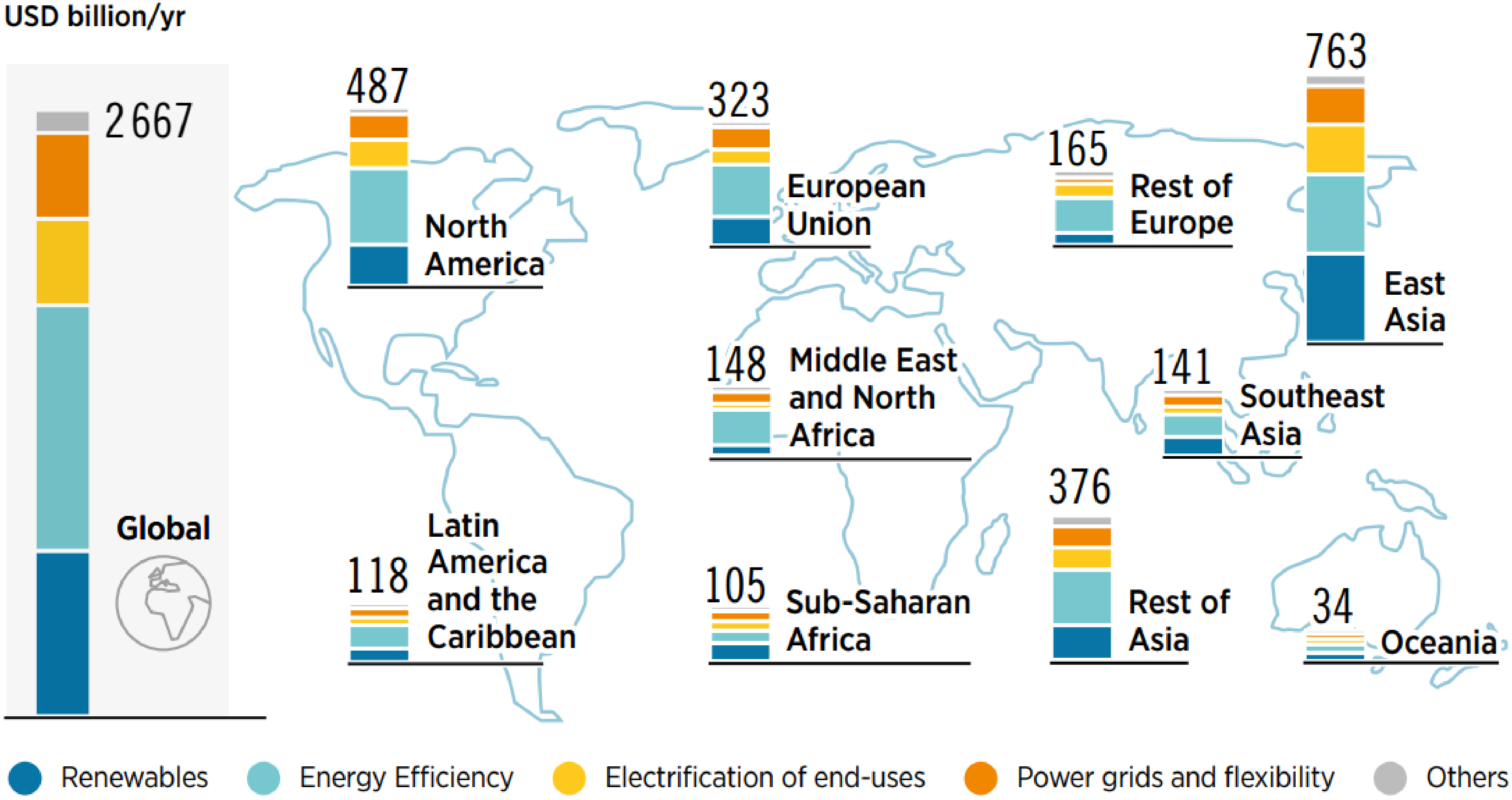
Transforming Energy Scenario (TES) cumulative investments between 2016 and 2050 (USD trillion)

Deeper Decarbonisation Perspective "zero" and TES cumulative investments between 2016 and 2050 (USD trillion)



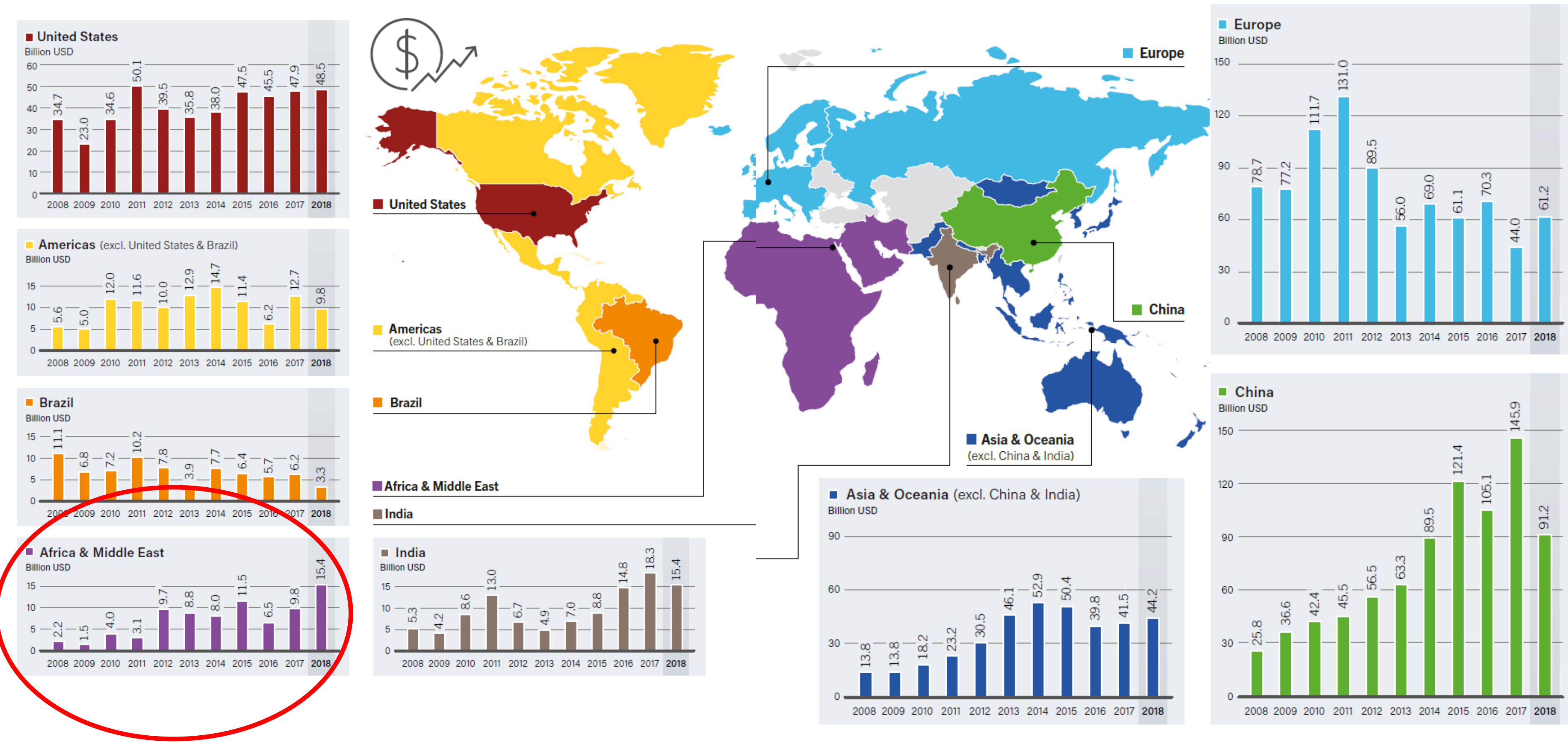
Based on IRENA analysis

Figure 3.11 Transforming Energy Scenario: Varying investment needs by region
Annual investments in the energy transformation by region through 2050



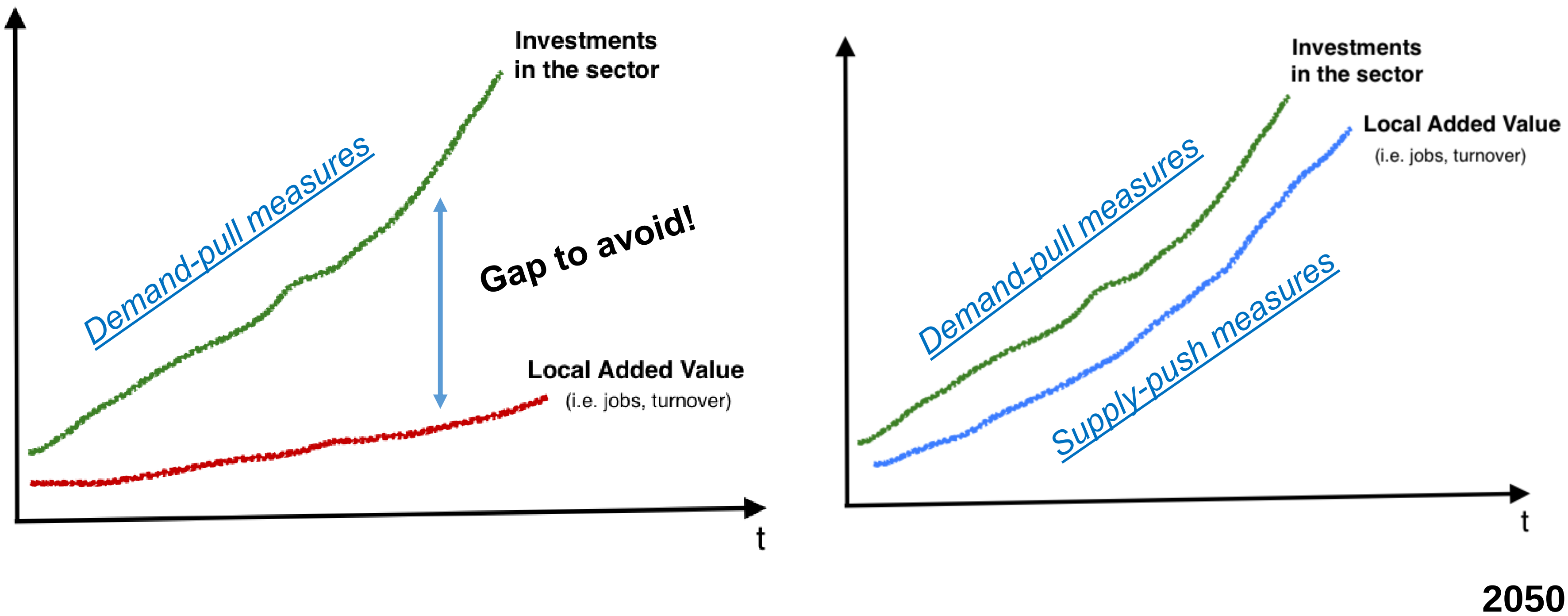
Kaum Investitionen in Afrika

FIGURE 48. Global New Investment in Renewable Power and Fuels, by Country or Region, 2008-2018



Source: BNEF.

Markteinführung von grünen Produkten und Dienstleistungen – "a new deal" für Entwicklungsländer?



- *Inklusivität und Nachhaltigkeit braucht Stärkung lokaler Innovation und Unternehmertum*
- *Teil der Bemühungen zur Reorientierung zu higher value added manufacturing (MVA)*

Grüne Industriepotentiale für Afrika

Agro-processing

1. Convert waste into black soldier fly animal feed (or other insect proteins)
3. Manufacture biological crop protectors such as bioherbicides, biofungicides and bioinsecticides
4. Manufacture plant-based protein
5. Manufacture cultured meat
6. Produce bioethanol as a low-carbon fuel alternative for transportation and cooking (replacement of firewood and charcoal)
16. Produce bioplastic using agricultural products

Power

10. Manufacture parts for wind turbines (primarily turbine towers)
11. Manufacture solar panels
12. Assemble off-grid solar systems (e.g., solar home systems, water pumps) for local markets
13. Assemble micro-grids for local markets

Forestry products manufacturing

2. Manufacture high-end cosmetic creams using forest friendly natural products
7. Manufacture cross-laminated timber (or other alternatives to cement)

Transportation

17. Assemble (with future potential to manufacture) electric vehicles for personal and commercial uses
18. Assemble (with future potential to manufacture) electric motorbikes and other two/three wheelers
19. Assemble (with future potential to manufacture) electric fishing boats
20. Manufacture storage inputs (batteries and fuel cells) for electric vehicles and boats
21. Manufacture charging facilities (and local infrastructure) for electric vehicles

Basic materials

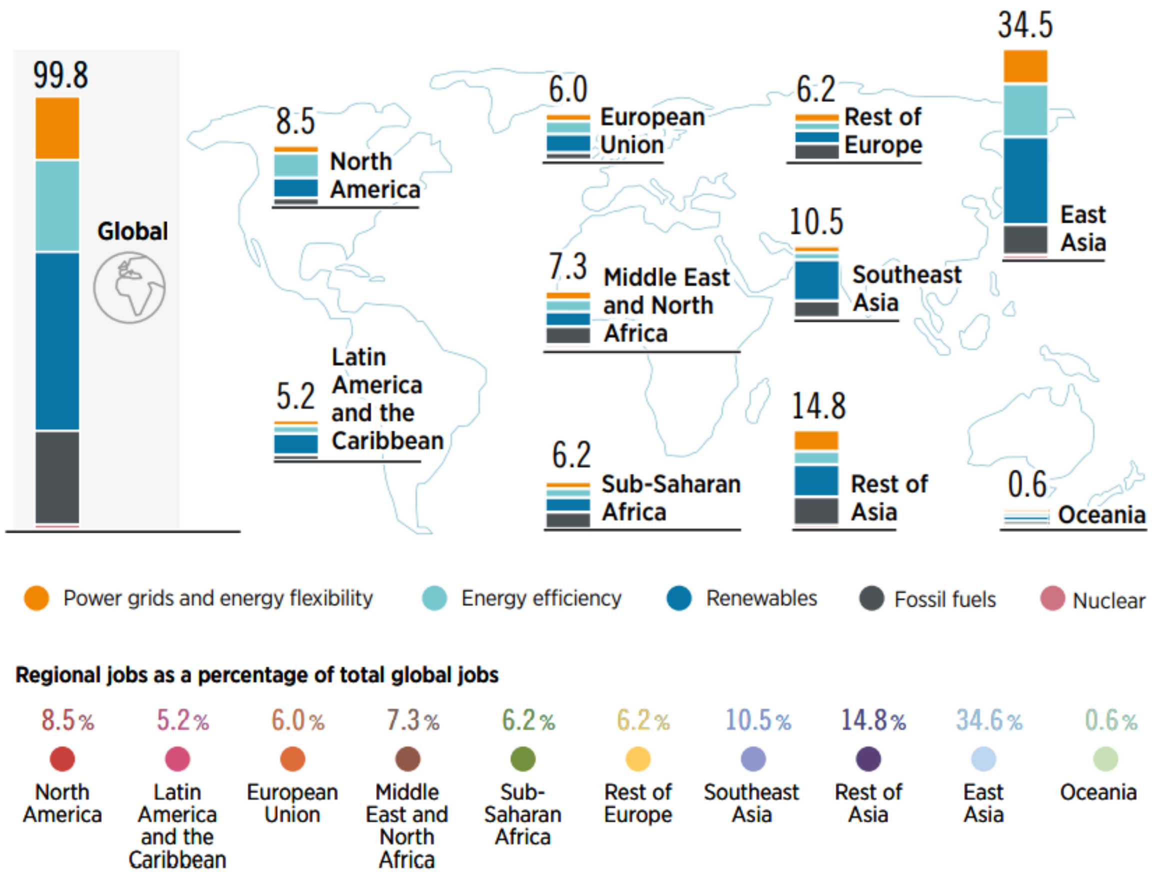
8. Manufacture direct reduced iron (DRI) using hydrogen or biomass fuel for export markets
9. Manufacture insulated glass using hydrogen fuel furnaces
14. Manufacture electrolyser for green hydrogen production
15. Production of green hydrogen for local (substitute fossil fuel for transportation) and export (ammonia) markets

Textiles

22. Set up mechanical recycling plant to recycle PET flakes into polyester fibres
23. Set up an "early-mover" hydrothermal plant to recycle polycotton into polyester and cellulose powder
24. Manufacture textiles from alternative fibres (e.g., fruit, vegetable, hemp)

Figure S.12 A hundred million energy jobs: Regional distribution

Energy sector jobs in 2050 under the Transforming Energy Scenario, by region



Based on IRENA analysis

Breites Arbeitsfeld, das verschiedenste Akteure und Fähigkeiten braucht!

Regional Clean Tech Cluster Program

Das BLOOM Programm

- Transfer des clean-tech clustering Konzepts zu Entwicklungsländern (Konzept von Industrie- und Schwellenändern) – traditionelle cluster im low-tech Bereich
- Verankerung von clean-tech als Teil der Industrie- und Exportpolitik
- Erhöhung der grünen Wertschöpfung und *manufacturing value added* (MVA)
- Cluster operieren als öffentlich-private non-profit Organisationen und Einheiten
- Fokus liegt auf Umwelt- und Klimalösungen (z.B. Energie, Müll, Abwasser) und Geschäftsmodellen, inkl. Industry 4.0
- Umsetzung über physische cluster-Infrastruktur mit Management-Team
- Cluster-Aktivitäten zielen auf die Reduzierung von Barrieren und Aufbau eines Ökosystem für clean-tech Geschäftsmodelle und Innovation
- Teilnahme an den globalen clean-tech Wertschöpfungsketten
- Zielgerichtete Kooperation zwischen Wirtschaft, Wissenschaft und Regierung
- Adaptiert zu lokalen Bedingungen und Voraussetzungen (z.B. Afrika, Inselstaaten)
- Regionaler Ansatz zur Selbsthilfe „clusters from the region for the region“
- Support hubs über das *Global Network of Regional Sustainable Energy Centres*

GNSEC Global Network Regional Sustainable Energy Centres

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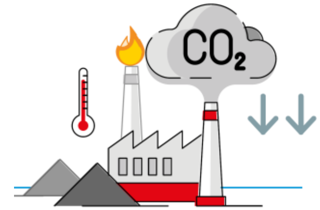
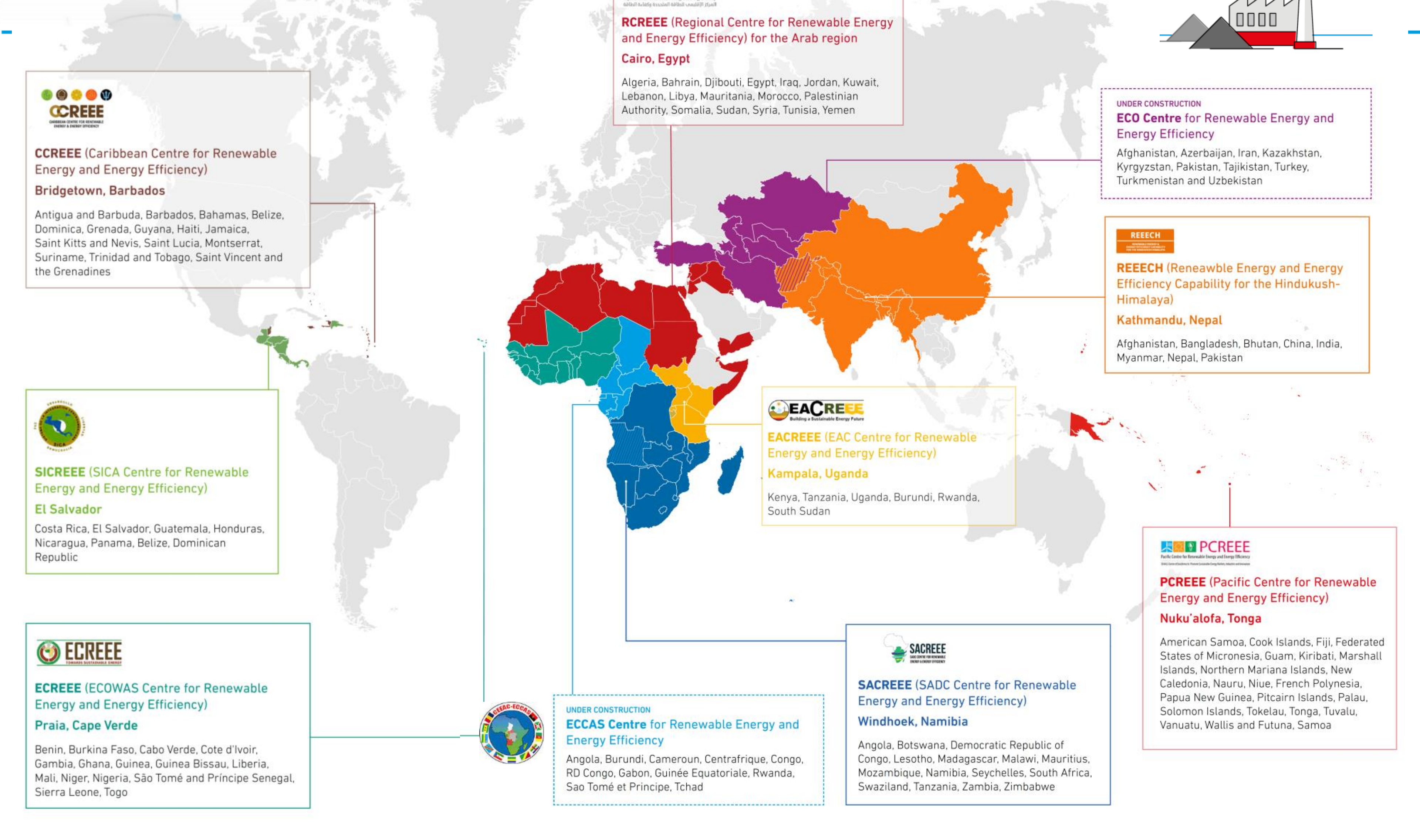
Regional Clean Tech Cluster Program





RCREEE

RCREEE (Regional Centre for Renewable Energy and Energy Efficiency) for the Arab region

Cairo, Egypt

Algeria, Bahrain, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Palestinian Authority, Somalia, Sudan, Syria, Tunisia, Yemen

CCREEE

CCREEE (Caribbean Centre for Renewable Energy and Energy Efficiency)

Bridgetown, Barbados

Antigua and Barbuda, Barbados, Bahamas, Belize, Dominica, Grenada, Guyana, Haiti, Jamaica, Saint Kitts and Nevis, Saint Lucia, Montserrat, Suriname, Trinidad and Tobago, Saint Vincent and the Grenadines

UNDER CONSTRUCTION

ECO Centre for Renewable Energy and Energy Efficiency

Afghanistan, Azerbaijan, Iran, Kazakhstan, Kyrgyzstan, Pakistan, Tajikistan, Turkey, Turkmenistan and Uzbekistan

REEECH

REEECH (Reneawble Energy and Energy Efficiency Capability for the Hindukush-Himalaya)

Kathmandu, Nepal

Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, Pakistan

SICREEE

SICREEE (SICA Centre for Renewable Energy and Energy Efficiency)

El Salvador

Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua, Panama, Belize, Dominican Republic

EACREEE
Building a Sustainable Energy Future

EACREEE (EAC Centre for Renewable Energy and Energy Efficiency)

Kampala, Uganda

Kenya, Tanzania, Uganda, Burundi, Rwanda, South Sudan

PCREEE

PCREEE (Pacific Centre for Renewable Energy and Energy Efficiency)

Nuku'alofa, Tonga

American Samoa, Cook Islands, Fiji, Federated States of Micronesia, Guam, Kiribati, Marshall Islands, Northern Mariana Islands, New Caledonia, Nauru, Niue, French Polynesia, Papua New Guinea, Pitcairn Islands, Palau, Solomon Islands, Tokelau, Tonga, Tuvalu, Vanuatu, Wallis and Futuna, Samoa

ECREEE
TOWARDS SUSTAINABLE ENERGY

ECREEE (ECOWAS Centre for Renewable Energy and Energy Efficiency)

Praia, Cape Verde

Benin, Burkina Faso, Cabo Verde, Cote d'Ivoir, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, São Tomé and Príncipe Senegal, Sierra Leone, Togo

UNDER CONSTRUCTION

ECCAS Centre for Renewable Energy and Energy Efficiency

Angola, Burundi, Cameroun, Centrafrique, Congo, RD Congo, Gabon, Guinée Equatoriale, Rwanda, Sao Tomé et Principe, Tchad

SACREEE

SACREEE (SADC Centre for Renewable Energy and Energy Efficiency)

Windhoek, Namibia

Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe

BLOOM Services

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Regional Clean Tech Cluster Program

- Öffentlich-privater Dialog über nationales clean-tech Leitbild und Exportlable
- Förderung von Kooperation zwischen clean-tech Unternehmen, angewandte Forschung, Institutionen, Investoren und Banken
- Raum und Ressourcen für gemeinsame Projekte, Testing, Prototyping und Kommerzialisierung
- Coaching und incubation für clean-tech Unternehmen und start-ups
- Coroporate finance und matchmaking mit Banken, Investoren und diaspora
- Award competitions and call for proposals
- Qualifizierungs- und Zertifizierungsunterstützung für prioritäre Lösungen
- Lobbying für unternehmerfreundliche Politiken, Regulierungen und Anreize
- Business intelligence für Export- und Finanzierungsmöglichkeiten
- Spezielle Förderung zur Partizipation von Frauen und Jugend
- Monitoring des clean-tech Fortschritts (e.g. surveys, industry reports)

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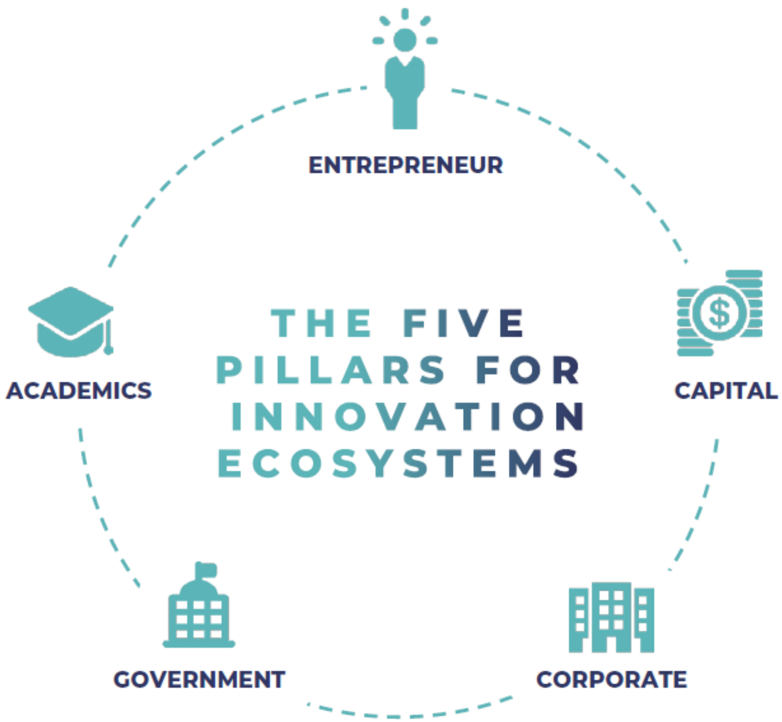
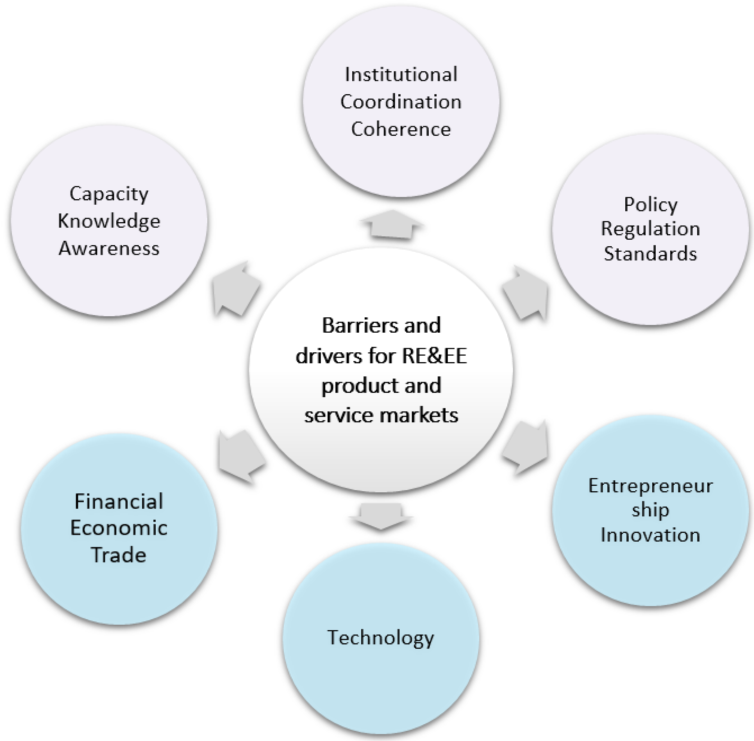
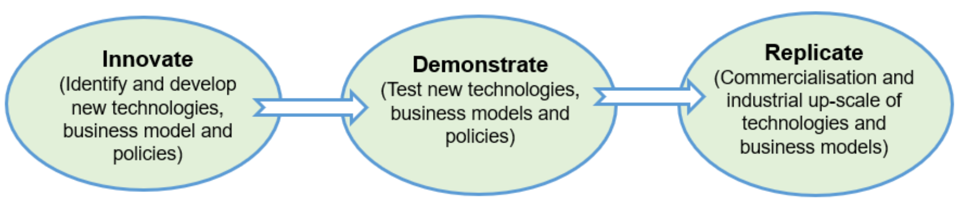
Regional Clean Tech Cluster Program





Diffusion and industrial up-scale of green innovations



Examples: e-mobility, digitalisation and industry 4.0 solutions

Arbeitsschwerpunkte

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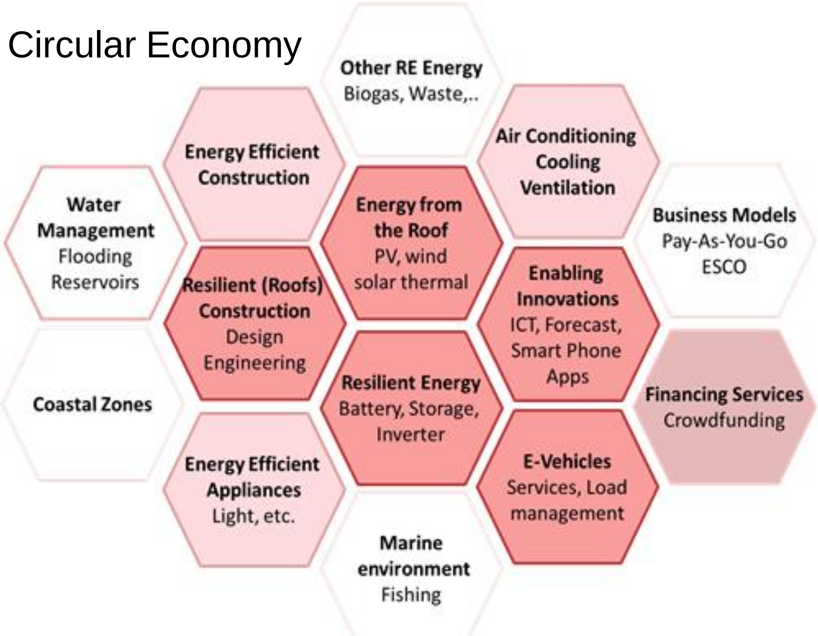
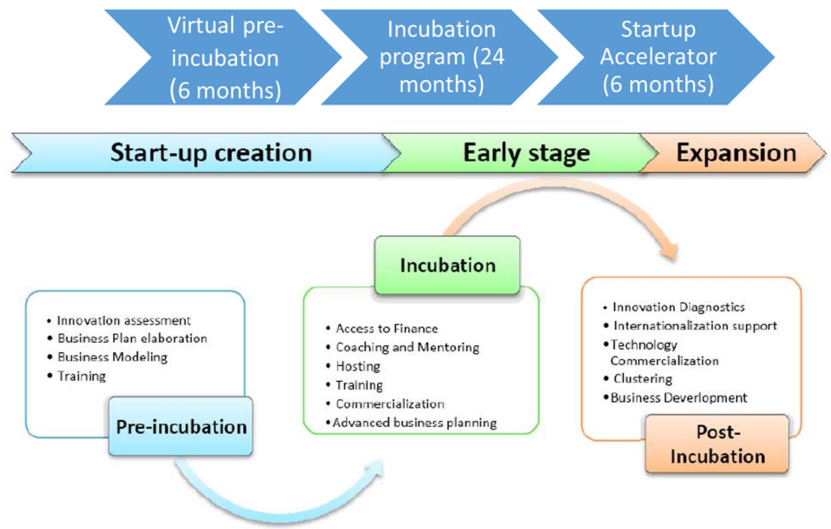
BARBADOS CLEANTECH CLUSTER

Green COVID-19 recovery in Barbados!

Circular Economy



BLOOM Cleantech Incubation Centre



Beispiele für Start-Ups

INCUBATEE	TECHNOLOGY	Readiness level
ProSolar246	Solar PV, IPP	Business planning and commercialization phase
OnSolar	Batteries & Smart Grids	Commercialization phase
BIMEV rental services	E-Vehicles (e-bikes)	Business planning and commercialization phase
Bioresin project, K.A. Bovell	Circular Bioeconomy (biodegradable plastics)	Research phase, lab demos. Business planning phase
SJPI- e-fishing vessel	Solar PV and batteries	Feasibility study phase
CEMBI	Enabling Innovations (smart phone recycling App)	Technology demonstration, business planning phase
Red Diamond	Circular Bioeconomy (green chemicals)	Business planning and validation phase
Green Collective 246	Circular Bioeconomy (biochemicals)	Feasibility study and business planning phase
Healing Grove Container Farm	Resilient Agriculture (high quality crops and herbs)	Business planning and commercialization phase
Good Ridge Power	Solar PV consulting	Business planning and commercialization phase

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BARBADOS CLEANTECH CLUSTER

Ecosystem for cleantech entrepreneurs and startups

BARBADOS INVESTMENT & DEVELOPMENT CORPORATION

UNIDO

Member of IASP

gef

Video:

https://www.youtube.com/watch?v=bXSyvCpL8qk&feature=emb_logo

Thank You! Everybody wants to BLOOM!

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Regional Clean Tech Cluster Program