

SUPPORTING INFORMATION TO DOCUMENT
FCCC/2016/SBSTA/INF.9

This document should be read in conjunction with the information note entitled “Mapping climate technology development and transfer activities and initiatives under and outside the Convention relevant to the implementation of the Paris Agreement” (FCCC/2016/SBSTA/INF.9). The data provided in the present document support specific information, tables or figures as referred to in the information note. Reference sources of the data in the present document have been included in the information note.

Table A

Global Environment Facility technology transfer projects and programmes prior to the establishment of the Poznan strategic programme on technology transfer

<i>Energy efficiency technology and the technology sector</i>	<i>Countries that have received GEF support</i>
Efficient lighting (compact fluorescent lamps, efficient street lighting, light-emitting diodes, etc.)	Argentina, Bangladesh, Brazil, China, Czechia, Egypt, Ghana, Hungary, Indonesia, Jamaica, Kenya, Latvia, Malaysia, Mexico, Morocco, Pakistan, Peru, Philippines, Poland, Russian Federation, Slovakia, South Africa, Thailand, Uruguay and Viet Nam
Energy-efficient appliances (refrigerators, air conditioners, washers, dryers, cookers, stoves, etc.)	Argentina, Bangladesh, Brazil, China, Cuba, India, Indonesia, Kenya, Mongolia, Pakistan, Russian Federation, Thailand, Tunisia and Viet Nam
Energy-efficient building design	Belarus, Bosnia and Herzegovina, Brazil, Bulgaria, China, Côte d'Ivoire, Czechia, Kyrgyzstan, Lebanon, Mauritius, Morocco, Senegal and Tunisia
Energy-efficient building materials (windows, doors, perforated bricks, straw bales, etc.)	Bangladesh, Bosnia and Herzegovina, China, Mongolia, Pakistan and Poland
Industrial energy efficiency technologies (steel, brick making, cement, ceramics, textile, foundry, rubber, wood, coke making, tea processing, food processing, pulp and paper, charcoal production, etc.)	Bangladesh, Belarus, Bulgaria, China, Costa Rica, Côte d'Ivoire, El Salvador, Honduras, Hungary, India, Iran (Islamic Republic of), Malaysia, Morocco, Nicaragua, Panama, Philippines, Poland, the former Yugoslav Republic of Macedonia, Tunisia and Viet Nam
District heating systems	Armenia, Belarus, Bulgaria, China, Croatia, Czechia, Georgia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Mongolia, Slovenia, Slovak Republic, Ukraine, Poland, Turkmenistan, Romania, Russian Federation and Uzbekistan
Power generation (rehabilitation) and distribution	Brazil, China, Ecuador, Guinea, India, Philippines, Sri Lanka and Syrian Arab Republic
Cogeneration (including heat recovering for power generation from industrial processes)	China, Czechia, Ethiopia, Kenya, Malawi, Russian Federation, Sudan, Swaziland, Uganda and United Republic of Tanzania
Energy-efficient motors	Bangladesh, China, India, Indonesia, Poland, Thailand, Pakistan and Viet Nam
Energy-efficient boilers	China, Poland and Russian Federation
Energy-efficient CFC-free chillers	Brazil, Colombia, India and Thailand

<i>Low-GHG-emitting energy generating technology</i>	<i>Countries that have received GEF support</i>
Biomass integrated gasification combined cycle generation	Brazil
Building-integrated photovoltaic power production	Malaysia
Concentrating solar power production	Egypt, Morocco and Mexico
Externally-fired combined cycle generation	Brazil
Microturbine cogeneration	Indonesia
On-grid PV power production	Mexico and Philippines
Stationary fuel-cell power generation	South Africa

<i>Renewable energy technology</i>	<i>Countries that have received GEF support</i>
Off-grid PVs	Bangladesh, Bolivia (Plurinational State of), Botswana, Burkina Faso, China, Costa Rica, Ethiopia, Eritrea, Ghana, India, Kenya, Lesotho, Morocco, Malawi, Namibia, Nepal, Peru, South Africa, Sri Lanka, Sudan, Swaziland, Uganda, United Republic of Tanzania, Zambia and Zimbabwe
On-grid PVs	India, Mexico and Philippines (also considered as OP7)
Solar water heating	Albania, Algeria, Chile, India, Lebanon, Mexico, Morocco, South Africa and Tunisia
Wind turbines	Azerbaijan, Bangladesh, Brazil, China, Costa Rica, Cuba, Democratic People's Republic of Korea, El Salvador, Eritrea, Ethiopia, Ghana, Guatemala, Honduras, Iran (Islamic Republic of), Jordan, Kazakhstan, Kenya, Madagascar, Mauritania, Mexico, Nepal, Nicaragua, Pakistan, Russian Federation, South Africa, Sri Lanka, Tunisia and Uruguay
Geothermal	Armenia, Bulgaria, Djibouti, Eritrea, Ethiopia, Hungary, Indonesia, Kenya, Lithuania, Philippines, Poland, Romania, Russian Federation, Tajikistan, Turkey, Uganda, Ukraine and United Republic of Tanzania
Methane from waste (mixed municipal and/or liquid biological waste)	China, Czechia, Jordan, Latvia, Mexico and Uruguay (some also qualified under STRM, see below)
Small (mini and micro) hydro	Benin, Bhutan, Burundi, Cameroon, Central African Republic, Congo, Democratic Republic of the Congo, Gabon, Haiti, Hungary, Indonesia, Mali, Montenegro, Nicaragua, Rwanda, the former Yugoslav Republic of Macedonia and Togo
Biomass cogeneration	Hungary, Malaysia and Thailand

<i>Renewable energy technology</i>	<i>Countries that have received GEF support</i>
Biomass boilers (heat production)	Belarus, China, Egypt, India, Kenya, Latvia, Poland, Slovakia, Slovenia and Sri Lanka
Biomass gasification for electricity	Chile, India and Uruguay
<i>Sustainable urban transport technology</i>	<i>Countries that have received GEF support</i>
Non-motorized transport	Botswana, Chile, Nicaragua, Peru, Philippines, Poland and Viet Nam
Bus rapid transit systems	Argentina, Brazil, Ghana, Senegal, South Africa and United Republic of Tanzania
Dedicated bus lanes	Argentina, Brazil, Chile, China, Ghana, India, Indonesia, Iran (Islamic Republic of), Mexico, Peru and South Africa
Electric three-wheelers	India
Hybrid buses	Egypt
Hydrogen-based fuel-cell buses	Brazil and China
Traffic demand management	Argentina, Brazil, Ghana and Mexico
<i>Technology under STRMs</i>	<i>Countries that have received GEF support</i>
Coal-bed methane/coal-mine methane	China, India and Russian Federation
Coal to gas conversion	Poland
Landfill gas utilization	China, India, Jordan, Latvia and Uruguay (also included above in OP6 table)
LPG substitution	Yemen
Natural gas system leakage repair	China and Venezuela (Bolivarian Republic of)

Abbreviations: OP6 = Operational Program 6, OP7 = Operational Program 7, CFC = chlorofluorocarbon, GEF = Global Environment Facility, GHG = greenhouse gas, LPG = liquid petroleum gas, PV = photovoltaic, STRMs = short-term response measures.

Table B

Mapping of the Global Environment Facility technology development and transfer projects and programmes post the Poznan strategic programme on technology transfer

Mitigation									
Project title	Description and updates by the implementing agencies	Country	Sector	Technology	Technology transfer & development mechanism/nature	Demonstration/ Deployment	Regulatory, policy and institutional instruments	TA and capacity - building	Presence and type of financing mechanism
Poznan strategic programme on technology transfer pilot projects									
Climate change-related technology transfer for Cambodia: using agricultural residue biomass for sustainable energy solutions (UNIDO) – under implementation	Technical assistance and investment to assist the transfer of biomass plants to two pilot firms. Capacity-building for national suppliers and relevant government departments It was concluded in 2014 that it was not technologically and economically viable to implement captive power/cogeneration. The principle reason included the intermittent nature of actual energy needs, the insufficient availability of local biomass, the lack of a conducive environment (e.g. feed-in tariff), as well as significant changes affecting baseline assumptions, including energy pricing. In the light of this, it was suggested to expand to other sectors (e.g. breweries/beverage and distilleries, etc.) where needs for thermal energy and electricity could justify an investment in self power generation. Additional technological options, such as high efficiency gasifiers, wood-fired dryers, absorption chillers, and fuel substitution in industrial kilns may be considered	Cambodia	Biomass energy	Not yet determined	Exogenous	Demonstration		✓	
Chile: promotion and development of local solar technologies in Chile (IDB) – started implementation in 2014	The project includes: (1) the development of standards and monitoring protocols for solar panels and solar systems; (2) training for public and private stakeholders on concentrated solar power and photovoltaic systems, and (3) a public awareness campaign to promote solar technology projects for both solar water heating and power generation	Chile	Renewable energy	Local solar photovoltaic and concentrated solar power (power generation and solar water heating)	Joint ventures with foreign suppliers; local construction and assembly	Market development	✓	✓	
China: Green truck demonstration project (World Bank) – launched in October 2011	Investment for the retrofitting of 150 trucks, the purchase of 150 new trucks, driver training, intellectual property right purchase/transfer. Technical assistance for all key partners for example on GHG measurement/verification, policy and institutional frameworks for scale-up In phase I of the project, three technologies were proven to have very marginal or no fuel-saving effects and will be eliminated from phase II. One new technology—light-weight aluminium alloy trailers—demonstrated considerable fuel-saving benefits and market popularity.	China	Transport	Green freight technologies	Intellectual property right purchase and transfer	Demonstration and instruments for scale up	✓	✓	

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	This technology is now part of phase II While monetary costs for the technologies are relatively low, transaction costs are relatively high (e.g. installation, tuning). This creates reluctance for the pilot companies to apply demonstrated technology products. As business expands, most trucking companies express strong interest in subsidies for new truck procurement. In phase II, the implementation agency will assess and accommodate those needs from pilot companies in order to scale up the demonstration effects.								
Solar chill: commercialization and transfer (UNEP) – implementation expected to start in 2015	The testing of two solar chill technologies, investment in procurement/installation of 100 units in each country In order to determine technical performance, user compliance and potential market demand for SolarChill technology through large-scale field tests of the SolarChill vaccine refrigerators (SolarChill A) and pilot introduction of the SolarChill household and light commercial refrigerators (SolarChill B) in three countries	Colombia, Kenya, Swaziland	Off-grid cooling technologies	Solar refrigeration (for rural medical application)	Exogenous; local procurement or manufacturing	Multi-country demonstration and commercialization; market potential research and outreach	✓	✓	
Construction of 1000 ton per day municipal solid wastes composting unit in Akouedo Abidjan (AfDB) – Implementation expected to start end 2015 The project does not appear in the GEF projects database	This project was endorsed by the GEF Chief Executive Officer in October 2013 and is expected to start implementation soon. The project preparation faced significant challenges, as it coincided with a period of instability in the country, with changes in the political environment as well as in government priorities. The project implementation has been delayed in order to integrate it into a larger sustainable city planning project that could serve as the basis for GEF-6	Côte d'Ivoire	Waste management	Solid waste composting	Not specified	Demonstration		✓	
DHRS irrigation technology pilot project to face climate change impact (International Fund for Agricultural Development) – project endorsed in 2011, redesigned and became effective in 2014	This adaptation project seeks to reduce the vulnerability of irrigated agriculture to climate change by testing innovative and efficient water-use technologies. Investment in a pilot demonstration of irrigation technology, technical assistance to train local farmers and stakeholders The project was redesigned, as initial field trials carried out during the project inception showed that the proposed technologies did not perform as expected under local conditions. After the minor amendment of the planned technologies, the project is ready to implement seven new technologies in Jordan. The project has finalized the procurement plans, and initiated the acquisition of materials and equipment to implement in the pilot farms	Jordan	Adaptation agriculture	Efficient irrigation technologies	Exogenous	Demonstration		✓	
Promotion and development of local wind technologies in Mexico (IDB) –	The general objective of the project is to enable the local development of wind turbines for distributed generation and contribute in order to enhance Mexico's local	Mexico	Energy	Wind turbines	Local development of wind turbines;	Develop and testing of a prototype		✓	

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implementation started in 2012	capacities in wind energy technology. Technical assistance to increase capacity for local development and implementation of wind power technology, investment to develop and test a prototype wind turbine built using a high component of national technology and manufacturing National market research showed that there are no research institutes or engineering firms in Mexico for the design and construction of wind turbine blades for medium and high capacity. Therefore, UNDP issued an international expression of interest for an expert for the design and construction of wind turbine blades The executing agency started market research for the construction of a 60 m wind energy tower, where detailed engineering works will be developed by the Mexican <i>Instituto de Inversiones Electricas</i> . Once the detailed engineering process is complete, the bidding process for the construction of the tower was expected in August 2015.				external expertise; knowledge transfer	wind turbine using a component of national technology and manufacturing			
Phase out of HCFCs and promotion of HFC-free energy efficient refrigeration and air-conditioning systems in the Russian Federation through technology transfer (UNIDO) – implementation started in March 2011	Technical assistance to build institutional capacity for the phasing out of ozone-depleting substance technologies, investment to support the phase out and destruction, technical assistance and investment to stimulate market growth for non-hydrofluorocarbon options	Russian Federation	Refrigeration and air-conditioning	Energy-efficient and HFC-free refrigeration and air-conditioning systems	Exogenous	Instruments for scaling up deployment	✓	✓	
Typha-based thermal insulation material production in Senegal (UNDP) – implementation started in November 2013	The project is striving to establish a typha value chain from the production of raw materials to implementation in buildings. It provides technical assistance/investment for basic evaluation and research, the transfer of technology and know-how, establishing local production, adapting the material for local application, a demonstration project and dissemination To date, various products have been developed from typha-cement and typha-earth. An artisan production line has been developed, and about 20 artisans and trainers were trained in the field of construction and public works on different modules. Market studies, including feasibility studies are under way for semi-industrial production lines. In addition, technology transfer has started for typha-earth through the training of local artisans, Doctor of Philosophy students, architects and local entrepreneurs in order to produce materials. The project has succeeded in bringing together national institutions. The Ministry of	Senegal Funding: 2.3 GEF grant, 5.6 co-finance	Building	Energy-efficient building materials (using invasive plant material)	Endogenous; value chain establishment	Development, testing and local production	The project brings together national institutions. Proposed integration of energy efficiency in the building code	✓	Revolving fund

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	Urban Development has requested the project to integrate energy efficiency principles into the building code								
Bamboo processing for Sri Lanka (UNIDO) – project launched in September 2012	<p>Scientific and technical analysis/technical assistance/investment to develop a policy framework, a laboratory for bamboo tissue reproduction, 10,000 hectares of bamboo plantation, machinery for wood flooring production and biomass pelletization production, along with associated capacity/know-how for sustainable operation</p> <p>The Sri Lanka National Bamboo Association was established; a mechanism with an instrumental role in the implementation of the project and the sustainability of the outputs. The association includes representatives and members of the entire bamboo value chain in Sri Lanka. It will be the custodian of the Revolving Fund that was established for growing and processing bamboo, introducing very low interest loans that when repaid will be reused for expanding the implementation to additional communities within Sri Lanka. The tissue culture laboratory at the University of Jayewardenepura is being expanded, ensuring that all necessary technical means are in place for the consistent production of bamboo plants to be used in local participating communities</p>	Sri Lanka	Building and energy	Bamboo technologies	Endogenous; RD&D	Commercialization instruments	Policy framework	✓	
Overcoming policy, market and technological barriers to support technological innovation and South–South technology transfer: the pilot case of ethanol production from cassava (UNIDO) – project started implementation in November 2013	The project aims to remove barriers and promote technology transfer in the production of ethanol, and to enhance South–South cooperation. It aims to increase fermentation efficiency in ethanol production, to promote private sector engagement, and to transfer the associated technologies to other countries in South-Eastern Asia. It includes technology demonstrations in order to enhance and motivate full-scale technology investment (e.g. it offers to establish a demonstration plant in collaboration with an interested partner). In order to remove policy and financial barriers, the project also provides training to policymakers, banks and entrepreneurs. The project established an ethanol information hub in Thailand to disseminate and support South–South technology transfer through web-based portals, and to promote Thailand as a regional centre for South–South bioethanol technology transfer. The demonstration plant was expected to start its operation in 2015. The project organized a meeting for investors in August 2014 as a part of its technical assistance to investors from Myanmar and Lao PDR. It	Thailand	Energy	Bioethanol production	South–South knowledge transfer	Demonstration plant	Investors meetings	✓	

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	resulted in ongoing discussion for two bioethanol plants in the Lao People's Democratic Republic								
GEF-5 funded regional and national projects supporting climate technology centres, networks for climate technology transfer and financing									
Pilot Asia-Pacific Climate Technology Network and Finance Center (CTNFC) (Asian Development Bank and UNEP) – project implementation started in late 2012	<p>The project objective is to pilot a regional approach to facilitating the deployment of climate technologies (mitigation and adaptation) that combine capacity development, the enhancement of enabling environments, financial investment and investment facilitation. It is also designed as a regional pilot for the CTCN complemented by a link to finance through the partnership with the Asian Development Bank</p> <p>The project supports the engagement of venture capital and private equity funds in climate technologies in the region</p> <p>It launched IPEX Cleantech Asia, a clean technology intellectual property marketplace in the Asia-Pacific region. It is now identifying opportunities for matching technology demands from companies in China, India, Indonesia and Malaysia with appropriate low-carbon technology developers</p> <p>The UNEP component facilitates a network of national and regional technology centres, networks, organizations and initiatives, and supports national and regional technology transfer centres and centres of excellence</p>	Asia and the Pacific	Multiple adaptation and mitigation technologies	From early commercialization to mature but new to a market	Endogenous and exogenous; range of technology transfer models supported	Facilitation of deployment, investment and commercialization	Mainstreaming of technology consideration in investment and development plans; national and regional networks and centres	✓	Linking with existing sources of finance (private and public)
Regional Climate Technology Transfer Center (EBRD) – under implementation	<p>The project aims to accelerate investment in climate change mitigation and adaptation technologies, and to incentivize the deployment of climate technologies with low market penetration, in order to create demonstration projects across these countries. The project is expanding the EBRD sustainable energy business model to the area of climate technology transfer, combining technical assistance (for policymakers and projects) with financial support in order to kick-start the market for climate technology investments</p> <p>The key focus of the technical assistance is on: (1) developing market assessment and monitoring techniques in partnership with the International Energy Agency and the Food and Agriculture Organization of the United Nations; (2) project assessment techniques for climate change mitigation and adaptation technologies; (3) the creation and/or support of networks; (4) assistance to individual investment projects incorporating advanced climate technologies; and (5) the establishment of regional technology transfer networks for knowledge-sharing. It is</p>	Early transition countries and Southern and Eastern Mediterranean countries	Multiple adaptation and mitigation technologies	Demonstration of technologies with low market penetration	Exogenous	Demonstration; market assessment and monitoring techniques	Networks	✓	Financial support

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	expected that up to 25 projects in early transition countries and up to 15 projects in Southern and Eastern Mediterranean countries will be supported between 2014 and 2016. Thus far the following technologies have received support: LED lighting, and building integrated solar-thermal, tri-generation, and energy management systems								
Climate technology transfer mechanisms and networks in Latin America and the Caribbean (IDB) – endorsed in 2014, and started implementation in 2015	The project aims to promote the development and transfer of environmentally-sustainable technologies in Latin America and the Caribbean by building national capacities to identify, assess, develop and transfer environmentally-sound technologies, focusing on: (1) the promotion of and support to regional collaborative efforts; (2) the support to planning and policymaking processes at the national and sectoral levels; (3) the demonstration of policies and enabling mechanisms; and, (4) the mobilization of private and public financial and human resources IDB and FONTAGRO (Regional Fund for Agricultural Technology) organized a competitive call for proposals on environmentally-sound technologies for adaptation in agriculture and awarded grants to eight multi-country consortiums. The consortiums will assess adaptation technologies relevant to key crops (e.g. rice, coffee and bananas) and livestock in various countries in Latin America and the Caribbean. IDB is collaborating with UNEP with a view to ensuring that the efforts under the project will also contribute to the region's capabilities to engage with and participate in the Technology Mechanism. IDB and UNEP have identified collaborations around the objectives on regional capacity-building, as well as enhanced interaction with regional organizations that are also members of the UNEP-led consortium hosting the CTCN	Latin America and the Caribbean	Multiple adaptation and mitigation technologies	Not specified	Not specified	Not specified	Planning and policymaking processes and networks; regional collaboration; engagement with CTCN	✓	Mobilization of private and public financial resources
Pilot African Climate Technology Finance Center and Network (AfDB) – endorsed in 2014; under implementation	The project supports the deployment of technologies for both climate change mitigation and adaptation by: (1) catalysing public and private finance for low-carbon technologies and climate resilient development projects; and (2) assisting with integrating technology transfer considerations into developing countries' policies and investment programmes, and strengthening the design and enforcement capacities of public institutions. Mitigation activities focus exclusively on the energy sector and are more specifically aligned with the Sustainable Energy for All initiative, whereas the adaptation activities focus	Sub-Saharan Africa	Mitigation: energy (aligned with SE4All); for adaptation: water sector	Not specified	Not specified	Not specified	Assistance with policy, institutional and organizational reforms	✓	Catalysing and mobilizing of public and private finance

Mitigation									
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	exclusively on the water sector. The project intends to mobilize additional financing notably from AfDB-managed instruments, such as the Sustainable Energy Fund for Africa or the African Water Facility								
Finance and Technology Transfer Centre for Climate Change (EBRD) – approved in October 2014	<p>The project aims to develop and demonstrate innovative policy and technical assistance packages and to support the development of performance-based financing mechanisms in order to increase investment in climate technologies in Ukraine. It consists of the following components: (1) supporting the design of innovative policy packages so as to promote energy self-sufficiency and technology transfer; (2) the development of industry guidelines, methodologies, technology baseline data, technical assistance and energy audits; (3) climate technology finance to support the development of performance-based financing; and (4) knowledge management and awareness</p> <p>The project will benefit from and liaise with the Regional Climate Technology Transfer Centre of EBRD, which is designed to support the climate technology market with a variety of instruments. The extension of the regional project into Ukraine will build on the findings of regional centre's experience</p>	Ukraine	Multiple	Climate technologies	Not specified	Not specified	Design of innovative policy packages to promote energy self-sufficiency and technology transfer	✓	Incentive grants; performance-based financing mechanisms
Promoting accelerated transfer and scaled-up deployment of mitigation technologies through the CTCN (UNIDO)	<p>The project is expected to serve as a pilot in order to highlight possible options for future CTCN-related outputs to be further developed as GEF-6 projects with concrete mitigation benefits, using GEF country allocations, in a country-driven manner. It is also expected to help the CTCN to design and test a framework through which it will work with financing institutions in order to help developing countries to design requests that would comply with the requirements of financing institutions and therefore be conducive to financial support and concrete implementation</p> <p>The objective is to facilitate the implementation of climate technology projects and policies in Parties not included in Annex I to the Convention by technical assistance and liaison with financiers. This will be achieved by: (1) supporting a process of technology transfer and deployment; (2) network building and liaison activities with key stakeholders, including the financial sector; and (3) knowledge dissemination and promotion. The project will focus on a subset of climate mitigation technologies that are technologically mature and tested, require</p>	Multiple countries	Not yet fully determined	Climate technologies that are technologically mature and tested, require moderate investment and can be replicated and scaled up within the targeted sector and country	Not specified	Investment and implementation of climate technology projects	Network building, including with the financial sector	✓	Design and testing of the framework for working with financial institutions

Mitigation									
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	<p>moderate investment and can be replicated and scaled up within the targeted sector and country</p> <p>The project is limited to a subset of seven requests for technical assistance (partly involving investment in climate technologies) that are representative of the CTCN overall portfolio. A tentative selection includes: F-refrigerants substitution (Chile), waste treatment (Colombia), energy-efficient lighting (Dominican Republic), agricultural productive use (Mali), energy efficiency in industry (Senegal), geothermal energy policy (Uganda), biowaste minimization and valorization (Viet Nam)</p>								
GEF-5 national level initiatives aiming at developing climate technology transfer and financing mechanisms									
Sustainable energy technology development (World Bank) – project expected to be endorsed by in April 2014	<p>Among the most important challenges for clean energy development that Mexico faces is the lack of academia–industry collaboration. In order to achieve its productivity and climate change mitigation goals, Mexico needs to expand the development and commercialization of ACE technologies</p> <p>Project components: (1) assessing the capacity of academic and research institutions, private enterprises, and subnational government entities across Mexico to develop and commercialize ACE technologies and identify promising initiatives , investments and strategic actions; (2) move promising innovative clean energy technologies toward commercialization by providing subgrants and TA. The program will provide subgrants to private sector enterprises for: (1) proof-of- concept stage development of ACE technologies; and (2) collaborative clean energy commercialization targeting industry–academia collaboration for ACE technologies. It seeks to fill a void in the current public and private financing landscape for early-stage technology commercialization in Mexico and to incentivize industry–academia collaboration in technology development. The project will be coordinated with the IDB project entitled “Climate technology transfer mechanisms and networks in Latin America and the Caribbean” and with the CTCN</p>	Mexico	Energy	Clean energy technologies	Endogenous; proof-of-concept and collaborative commercialization	Commercialization	Facilitating of industry–academia collaboration	✓	Grant finance
Facility for low carbon technology deployment (World Bank) – project expected to be endorsed in July 2014	The project supports the identification and deployment of low-carbon technologies in India that can address technology gaps to mitigate climate change and improve the economy’s energy efficiency. The facility is expected to become part of the network with the CTCN and to be	India		Low-carbon technologies	Not specified	Not specified	Facility for LCT deployment	✓	Not specified

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	able to be a connecting node with other climate technology centres in developing countries								
Low carbon technology transfer in the Russian Federation (UNIDO) – will be presented to the GEF Council for approval in May 2014	The project aims to increase and accelerate the transfer and deployment of LCTs through the establishment of institutional mechanisms, pilot demonstration investments in LCT manufacturing capacity transfer, the increased availability of financing for LCT transfer and application projects, and enhanced policy frameworks. The project proposes the establishment of a national competitive platform in order to stimulate, reward and facilitate the development and implementation of LCT transfer and deployment projects. It will facilitate greater and broader collaboration between key public and private actors as well as stakeholders in the low-carbon technology transfer chain in order to achieve greater coherence of plans and actions. The platform is intended to establish close cooperation with the nationally designated entity and to enhance its institutional and functional capacity. Projects will receive technical assistance to bring them towards the investment and implementation stage. The project would work with partner Russian financial institutions in order to establish a financial mechanism; a loan-guarantee scheme is envisaged and has been initially discussed with partner financial institutions	Russian Federation		Low-carbon technologies	Not specified	Pilot demonstration investments	National Competitive Platform; facilitate collaboration between public and private actors and stakeholders	✓	Financial mechanism
GEF-5 National or global climate change mitigation initiatives with potential links to the CTCN									
Local development and promotion of LED technologies for advanced general lighting (UNIDO) – approved in 2013	The project aims to support quality improvement of LED manufacturing in order to meet international quality standards and to increase the use of LEDs in buildings. It is fully consistent with the technology needs assessments which highlight the significant energy saving potential in the lighting sector. Component 1 will address the absence of supporting LED lamp standards and regulations, insufficient expertise and technical skills so as to support the enforcement of new LED lamp standards and regulations, insufficient capacity of testing and research and development facilities, and insufficient local knowledge to implement scaled-up local production of LED lamps. In order to strengthen ongoing efforts by Vietnamese-based LED manufacturers, GEF assistance will source international expertise on advanced knowledge on LED lamp manufacturing. Component 2: the demonstration of cost-effective local commercial production of LED lighting devices, addressing barriers related to low public awareness about LED lighting	Viet Nam	Buildings	LEDs	Endogenous and exogenous (knowledge transfer)	Demonstration	Standards and regulations; awareness-raising	✓	

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	product benefits in a variety of applications from outdoor street and industrial lighting to indoor lighting for commercial and residential applications. The project is building on existing LED programmes in Viet Nam								
Global Cleantech programme for SMEs (UNIDO) – under implementation since 2013	<p>The programme includes six MSPs approved in six countries (Armenia, India, Malaysia, Pakistan, South Africa and Turkey) around the organization of clean technology competition and acceleration programmes. Led by a local executing partner in each country, supported by local stakeholders and advisers, it bolsters emerging clean technology start-ups and the local entrepreneurial ecosystem and policy framework. The programme in each country receives funds worth USD 1 million to USD 2 million from the GEF. It selects start-ups in each country to participate in a competitive national programme that trains, mentors and promotes them as well as connects them with potential investors, customers and partners. The very best start-ups from each country are brought together to the Cleantech Open Global Forum in Silicon Valley, United States of America, for recognition and awards, and where they will have the opportunity to be connected with potential partners, customers and investors from around the world</p> <p>An integral part of programme is the development of the institutional capacity of local implementing partners, typically government agencies focused on SME development, clean technology and innovation</p>	Six countries: Armenia, India, Malaysia, Pakistan, South Africa and Turkey	Energy, water	Renewable energy, energy efficiency, waste to energy, water efficiency	Endogenous; early stage / commercialization		National clean technology competition and acceleration programme; connection with potential customers, partners and investors; Cleantech Open Global Forum	✓	Facilitation of access to strategic investors, angel groups and venture capital firms
Other GEF-5 projects aimed at promoting and transferring innovative low-carbon technologies									
Integrated responses to short-lived climate forcers promoting clean energy and energy efficiency (UNEP) – MSP	Project objective: contribute to the development and implementation of a more comprehensive and sustainable LEDS for Mexico through an integrated assessment of SLCFs, and the development and demonstration of targeted SLCF mitigation policies. Integrated assessments of the key emission sources of SLCF and subsequently the assessment and analysis of SLCF mitigation options will help the Government of Mexico to prioritize efficient mitigation policies for their LEDS. The project contributes to climate change mitigation 1: outcome 1.2: enabling policy environment and mechanisms created for technology transfer. Component 1: characterization of methane, black carbon and co-pollutants from key emission sources resulting in improved knowledge on key emission sources and of mitigation potential of addressing SLCF. Component 2: assessment and selection of	Mexico	LEDS	SCLF sources and mitigation options	Not specified	Demonstration	Integration of SLCF mitigation measures into LEDS	✓	

Mitigation									
Project title	Description and updates by the implementing agencies	Country	Sector	Technology	Technology transfer & development mechanism/ nature	Demonstration/ Deployment	Regulatory, policy and institutional instruments	TA and capacity - building	Presence and type of financing mechanism
	technically feasible and economically viable SLCF mitigation policies for implementation in Mexico. Component 3: demonstration of SLCF mitigation technologies for key sources. Component 4: integration of SLCF mitigation measures into LEDES. Component 5: capacity-building, awareness-raising								
Transfer of environmentally sound technologies for industrial climate change mitigation in the Republic of Tatarstan, Russian Federation (UNIDO)	The objective of this project to improve the resource efficiency and reduce the GHG emissions of key manufacturing industries operating in the Republic of Tatarstan as well as to enable the agroforestry industry's capacities to produce planting material for climate change mitigating carbon sink enhancement The following three-pronged approach will be used: (1) technical assistance for the application of the integrated UNIDO TEST methodology by priority manufacturing industry clusters for energy-efficient and low GHG production patterns; (2) transfer of environmentally sound technologies to State-owned nurseries for the energy-efficient industrial scale production of planting material for carbon sequestration; and (3) building and strengthening of institutional capacities and support for the development of regulatory and economic instruments for the mainstreaming, scaling up and rolling out of the UNIDO TEST methodology beyond the lifespan of the project. The TEST methodology demonstrates the industries in which savings can be achieved by changing the production regime to resource efficient cleaner production or which return on investment can be achieved by making investments (e.g. reduced energy costs and reduced water consumption) in environmentally sound technologies. The use of indigenous plants adapted to climate change will ensure that floodplain habitats with a significantly positive impact on Tatarstan's biodiversity will be established	Russian Federation	Manufacturing sector	UNIDO TEST methodology; agroforestry for carbon sink enhancement	Endogenous; technology transfer	Demonstration	Support for the development of regulatory and economic instruments	✓	
Reducing greenhouse gas and ODS emissions through technology transfer in the industrial refrigeration and air conditioning sector (UNIDO) – request for MSP approval	The proposed project addresses barriers to increased energy efficiency in the industrial refrigeration sector and the adoption of low GWP refrigerants. A synergistic approach is proposed to create a policy and regulatory environment conducive to the adoption of new technologies; support technology transfer through the provision of targeted technical support mechanisms to identify energy efficiency measures and refrigerant options - including their economic viability - and incentives for owners/operators in order to carry out	Gambia	Industrial refrigeration and air-conditioning	Energy-efficient industrial refrigeration and low GWP refrigerants	Support for technology transfer	Provision of incentives and technical assistance for the adoption of energy efficiency and low GWP refrigerants	Development of conducive policy and regulatory framework	✓	Financial incentives for owners/ operators

Mitigation									
Project title	Description and updates by the implementing agencies	Country	Sector	Technology	Technology transfer & development mechanism/ nature	Demonstration/ Deployment	Regulatory, policy and institutional instruments	TA and capacity - building	Presence and type of financing mechanism
	improvements; and implement targeted capacity-building and awareness initiatives. Component 1 focuses on developing the national policy, regulatory and legal frameworks. Component 2: (1) provides technical assistance for the identification of energy efficiency measures and new refrigerant options; (2) establishes a quality assurance mechanism for refrigerants; and (3) provides a financial incentive mechanism for owners/operators. Targeted directly at supporting industry. Component 3: awareness-raising								
Reducing greenhouse gas and ODS emissions through technology transfer in industrial refrigeration (UNIDO) – request for MSP approval	The proposed project addresses barriers to the use of very low GWP alternatives to HCFC-22 in industrial refrigeration. Component 1 focuses on developing the national policy, regulatory and legal frameworks necessary to support the adoption of low-GWP, higher-efficiency equipment that does not use HCFC. Component 2 is designed to introduce hydrocarbon refrigerant systems to the Vietnamese market and to demonstrate their effectiveness in reducing ODS and GHG emissions to both policymakers and to facility owners and operators. The technology transfer mechanisms that will be put in place include: (1) pilot facility conversions; (2) a financial scheme for facility owners to convert their facilities to the new technology; and (3) the creation of a local knowledge base on alternative refrigerants, including training and capacity-building. Component 3 is designed to improve the awareness of stakeholders regarding potential new refrigeration technologies and their benefits, and relevant regulatory frameworks	Viet Nam	Industrial refrigeration	Very low GWP alternatives to HCFC-22 in industrial refrigeration	Support for technology transfer	Pilot facility conversions	Development of a conducive policy and regulatory framework	✓	Financial scheme for the conversion of facilities to the new technology
GEF-6 technology transfer projects supported in line with the Long-term program on technology transfer (contributing to objective 1 of GEF-6 climate change mitigation strategy)									
Improving mobility in Parakou (AfDB)	Project objective: promote more efficient systems for vehicle maintenance in order to mitigate GHG emissions and improve air quality, while establishing a policy framework leading to more sustainable urban and transport planning and management in Parakou. Component 1: technical assistance for the design and implementation of sustainable urban planning in Parakou. Component 2: organization of transport infrastructure with the aim of increasing mobility in targeted areas through the implementation of a comprehensive integrated intelligent transport system programme and ancillary measures to promote road safety and the utilization of non-motorized transport along the corridor. Component 3: two-wheeler maintenance and service optimization	Benin	Urban and transport	Integrated intelligent transport system programme, non-motorized transport, maintenance and other measures	Exogenous; not specified	Project implementation	Policy framework for sustainable urban and transport planning and management	✓	

Mitigation									
Project title	Description and updates by the implementing agencies	Country	Sector	Technology	Technology transfer & development mechanism/nature	Demonstration/ Deployment	Regulatory, policy and institutional instruments	TA and capacity - building	Presence and type of financing mechanism
	programme; a pilot programme to support the capacity-building to optimize the motorbike service chain in Parakou to test local feasibility in order to reduce air pollution and GHG emissions								
Upgrading of China SHP capacity project (UNIDO)	The project objective is to remove barriers to the ecological refurbishment of existing rural SHPs through pilot demonstrations in technology and management applications, policy advice as well as capacity-building. Component 1: policy and institutional framework promoting green SHP plants. Proposals for guidelines, green SHP standards, supportive policies and strategies, promotional instruments and incentive measures, such as a green hydropower feed-in tariff and ecological compensation systems, will be prepared alongside financing supporting and credit supporting policies, in order to facilitate the implementation and scaling up of green SHPs. Experiences and practices on environmental regulations (ecological flow maintenance, river environment recovery) will also be studied. Component 2: greening and improving the management and safety standards of existing SHP plants. This component encompasses technical assistance, technology transfer and investment activities. About 15 stations from the refurbished SHP plants will be selected to develop green small hydropower demonstration plants. The GEF contribution of USD 5.5 million will be used mainly to cover the incremental costs associated with improving the environmental performance of SHPs. Component 3: technical assistance to strengthen the knowledge base and capacities of relevant stakeholders	China	Energy	Green small hydro technologies	Not specified	Pilot demonstration projects	Policy and institutional frameworks for green SHP plants	✓	Proposal for financing and credit supporting policies
Projects under the non-grant public-private partnerships for the technology transfer window									
iLEF (World Bank) – request for Chief Executive Officer approval	Objective: the development and launch of a single-purpose facility financing the conversion of traditional urban street lighting technologies to more efficient LEDs and by doing so realizing the associated CO ₂ as well as budgetary savings for municipalities, globally. Project component 1: iLEF design, product launch, establishing the first of its kind global energy efficiency financing facility for cities, bridging the gap between institutional investors and energy efficiency investments at the municipal level, starting with LED street lighting. The facility is to be managed by the World Bank. Co-financing private sector iLEF equity investment: USD 50 million	Global	Urban street lighting	LEDs		Deployment; procurement			Global financing facility; private equity investment: USD 50 million

Mitigation									
Project title	Description and updates by the implementing agencies	Country	Sector	Technology	Technology transfer & development mechanism/nature	Demonstration/Deployment	Regulatory, policy and institutional instruments	TA and capacity - building	Presence and type of financing mechanism
Equity fund for the small projects independent power producer procurement programme (non-grant) (Development Bank of Southern Africa), GEF Trust Fund: USD 16.6 million; total cost: USD 207.0 million) – concept approved	The objective of this non-grant project is to establish and capitalize an investment equity fund, which provide small projects with equity funding in order to help to attract debt financing. The project creates several innovations: a debt fund, a GEF-funded equity fund and a securitization platform. The rationale for the equity fund is to enable the participation of SMEs in the renewable energy sector in line with the objectives of the Small Projects Independent Power Producers Programme (IPPP). The raising of equity by these SMEs in the market is one of the fundamental challenges that have to date not been resolved by the Facility for Investment in Renewable Small Transactions. GEF resources will therefore afford SMEs access to equity funding at attractive rates. SME failure to access funding is attributed to a host of barriers, including transaction (bid) costs being disproportionate to the investment returns achievable. The equity fund shall serve as a mechanism to address this barrier. In terms of available equity funding in the market, commercial lenders providing funding to the SMEs participating under the IPPP programme have a targeted return (nominal internal rate of return) of 14%. This therefore reduces the SME nominal returns in the projects, discouraging many existing and potential small-scale renewable energy players. GEF funding will increase the financial viability of small-scale projects. GEF equity funding will be repaid over a period of five years (assuming an expected minimum internal rate of return of 6%), against a Power Purchase Agreement term of 20 years. The technical assistance (project preparation) component of the facility shall ensure the funding of bid-ready projects by the GEF proposed equity fund	South Africa	Energy	Small-scale renewable energy		Investment in small renewable energy projects			Investment equity fund which provides small projects with equity funding to help attract debt financing

Adaptation									
Project title	Description and updates by the implementing agencies		Sector	Technology	Technology transfer and development	Demonstration/ deployment	Regulatory, policy, institutional instruments	TA and capacity - building	Presence and type of financing mechanism
Climate change adaptation initiatives with potential links to the CTCN (as reported by the GEF)									
Enhancing capacity, knowledge and technology support to build climate resilience of vulnerable	The project aims to reduce risks from increased desertification, floods and erosion, and sea level rise to the target communities in the identified project sites in	Mauritania, Nepal, Seychelles	Adaptation/ various	Adaptation technologies	Knowledge transfer	Pilot demonstration	Dissemination of best practices	✓	Not specified

Adaptation									
Project title	Description and updates by the implementing agencies		Sector	Technology	Technology transfer and development	Demonstration/ deployment	Regulatory, policy, institutional instruments	TA and capacity - building	Presence and type of financing mechanism
developing countries (UNEP) – endorsed in 2013, under implementation	Mauritania, Nepal and Seychelles respectively. Component 1 will strengthen capacity-building at the local, national and regional levels to plan and implement climate change adaptation technologies. Component 2 will improve the availability of information and increase public awareness on best practices for implementing and financing adaptation technologies with an ecosystem management approach. Component 3 will support technology transfer and know-how on best-practice adaptation measures through the integration and demonstration of concrete on-the-ground activities to build the climate resilience of vulnerable communities in the selected countries of each of the three regions. The project promotes the concept of dynamic, learning organizations that have an adaptive management approach. Best practices from interventions will be disseminated through the regional networks that are a part of the proposed project. The project will develop indicators for ecosystem-based approaches to adaptation. The information gathered by the project is expected to be referenced as part of the knowledge management system of the CTCN						through regional networks		
Innovative projects financed through SCCF-B to promote the transfer of adaptation technology (listed by the GEF in its report to SBI 42)									
Bosnia and Herzegovina: Technology transfer for climate resilient flood management in the Vrbas River Basin	The project will introduce technologies to manage flood risks, and integrate climate change information in key sector plans and policies. Components: (1) enabling the environment for climate risk sensitive water and flood management. It will build on the existing legislative and regulatory framework and will fully mainstream the climate risk management aspects, especially in relation to flood hazards; (2) technical and institutional capacity for transferring climate resilient flood management technologies and approaches. This component will be focused on developing the tools, data, databases, monitoring systems, methods and procedures for enabling effective flood risk management. It will include the elaboration of an institutional capacity development plan, and the provision of training in the use of all tools developed; (3) climate resilient flood management technologies for vulnerable communities in the Vrbas River Basin. The development of an integrated flood risk management plan for the river basin, taking a bottom-up, multi-stakeholder approach. It will identify and initiate some of the priority flood management measures (e.g. a	Bosnia and Herzegovina	Flood management	Climate resilient flood management technologies and approaches	Not specified	Identify and initiate priority flood management measures; development of tools, data, databases, monitoring systems, methods and procedures for flood risk management	Mainstreaming of flood hazards	✓	Exploration of options for financial incentives (through municipal job creation or loan/ insurance repayment schemes)

Adaptation									
Project title	Description and updates by the implementing agencies		Sector	Technology	Technology transfer and development	Demonstration/ deployment	Regulatory, policy, institutional instruments	TA and capacity - building	Presence and type of financing mechanism
	community afforestation scheme on the floodplains, establishing locally controlled and managed flood zones, and watershed rehabilitation works, etc.). The project will explore the options for incentives (through municipal job creation or loan/insurance repayment schemes), whereby the local population is systematically engaged in flood management solutions on the ground								
Mainstreaming climate change adaptation through water resource management in leather industrial zone development (UNIDO)	The project supports the integration of climate change adaptation considerations (water conservation, water treatment, water flow and flood management, capacity-building and awareness-raising regarding CCA measures and incorporating CCA concerns into the urban development planning) to a baseline project already initiated in Punjab, Sialkot district of Pakistan for the leather industrial zone development. The project aims to address the local policy, capacity and technological barriers, in order to demonstrate a model to be replicated in other parts of the country. The project will introduce water conservation and effluent treatment technologies in order to address human health risks and agricultural and water pollution, by providing a road map and advice on urban planning taking into account development and climate changes, and will propose and implement measures (e.g. water harvesting, water conservation and water retention). The project will provide technical assistance for the establishment of an effluent treatment plant. The project will also introduce water harvesting and conservation practices like installation of water meters to each tannery unit for controlled water use. The project will promote and introduce a solar water heating system	Pakistan	Industrial tanneries	Water conservation and effluent treatment technologies; solar water heating systems	Exogenous	Implementation of measures; demonstration	Incorporating CCA concerns into urban development planning	✓	USD 3.3 million
SSCF- and LDCF-funded adaptation projects (GEF report to SBI 42)									
Strengthening the adaptive capacity to climate change in the fisheries and aquaculture sector (Food and Agriculture Organization of the United Nations) – (project approved)	Component 1: strengthening public and private institutional capacities for effective climate change adaptation in fisheries and aquaculture leading to the inclusion of climate change implications for fisheries and aquaculture activities into sectoral and national policy design. Component 2 seeks to implement concrete adaptation actions and investment measures in seven pilot coastal communities along the country leading to stakeholders adopting adaptive capacity systems and investing in innovative adaptation technologies at the local level. Component 3: strengthening climate change knowledge and awareness of fisheries and aquaculture	Chile	Fisheries and aquaculture	Adaptive capacity systems and innovative adaptation technologies		Seven pilot/ demonstration projects	Inclusion of climate change implications for fisheries and aquaculture activities into sectoral and national policy design	✓	

Adaptation									
Project title	Description and updates by the implementing agencies		Sector	Technology	Technology transfer and development	Demonstration/ deployment	Regulatory, policy, institutional instruments	TA and capacity - building	Presence and type of financing mechanism
	communities. A medium to long term LAP (Local Area Plan) portfolio synthesizing and articulating knowledge, experiences and conclusions drawn from the seven pilot projects, including guidelines on adaptation objectives, approaches, procedures, performance indicators and budget allocation will be prepared and shared with the Ministry of the Environment as a contribution to the NAP-FAS (National Action Plan for Adaptation to Climate Change in Fisheries and Aquaculture Sector)								
Climate change adaptation technology transfer projects supported in line with the Long-Term Program on Technology Transfer during the reporting period (July 2013 to March 2014) - SBI 40									
Strengthening the resilience of the energy sector in Benin to the impacts of climate change (UNDP)	The project objective is to reduce the impacts of climate change and variability on Benin's energy sector. Project components: (1) mainstreaming adaptation to climate change into energy policies and management and planning strategies and tools; (2) sustainable land and forest management practices for strengthening the climate resilience of the zones supplying wood for energy; and (3): energy use and production technology transfers to strengthen the resilience of livelihoods and living conditions of the vulnerable communities. The project will support local development and income generating activities around the exploiting of non-timber forest products and the agro-sylvo-pastoral sector. The dissemination of 10,000 improved wood and charcoal stoves and 1,000 pressure cookers, and the introduction of affordable energy alternatives will contribute to households' purchasing powers. The project will also support the development of at least three innovative financial products in order to finance the required investments for the production of stoves and waste digesters, and their access by households by the main microfinance institutions operating in rural Benin	Benin	Energy	Improved wood and charcoal stoves and pressure cookers; waste digesters		Demonstration and dissemination	Mainstreaming	✓	Development of innovative financial products to finance production and access SSCF: USD 9.0 million

Abbreviations: ACE = advanced clean energy, AfDB = African Development Bank, CCA = climate change adaptation, CTCN = Climate Technology Centre and Network, EBRD = European Bank for Reconstruction and Development, GEF = Global Environment Facility, GEF-5 = the fifth replenishment of the GEF, GEF-6 = the sixth replenishment of the GEF, GHG = greenhouse gas, GWP = global warming potential, HCFCs = hydrofluorocarbons, HFC = hydrofluorocarbon, IDB = Inter-American Development Bank, iLEF = International Lighting Efficiency Facility, LCT = low-carbon technology, LED = light-emitting diode, LEDS = low emissions development strategy, MSPs = medium-sized projects, ODS = ozone-depleting substances, SBI = Subsidiary Body for Implementation, SHP = small hydro power, SLCF = short-lived climate forcer, SMEs = small- and medium-sized enterprises, TA = technical assistance, TEST = transfer of environmentally sound technologies, UNDP = United Nations Development Programme, UNEP = United Nations Environment Programme, UNIDO = United Nations Industrial Development Organization.

Table C

Summary of technology activities and initiatives as reported in biennial reports and national communications

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
Australia	<p>Australia is committed to supporting developing countries to access and develop climate friendly technologies critical to sustainable development. It provides support through both multilateral and bilateral channels. Multilaterally, Australia delivers its support through its membership and participation in a number of technology development, transfer and cooperation initiatives, including: The Clean Energy Solutions Centre (CESC), an online knowledge-sharing platform showcasing best practice clean energy policies, data and analysis; the International Energy Agency (IEA) Climate Technology Initiative; the International Renewable Energy Agency (IRENA); and the International Partnership for Energy Efficiency Cooperation.</p> <p>In addition, Australia provides direct bilateral technology development and transfer support to a range of developing countries, focusing on areas in which Australia has specialist expertise, for example photovoltaics, in which its training is helping developing countries to build their endogenous clean technology capacity</p> <p>Recognizing that the best technology development and innovation often comes from international collaboration in which countries play to their respective strengths, Australia has partnered with a Shanghai-based investor to establish an AUD 120 million renewable energy venture capital fund in order to support the commercialization of innovative renewable energy technologies</p> <p>Australia is also supporting the transfer of its innovative land-sector technologies and know-how to developing for example the International Savanna Fire Management Initiative, its measurement, reporting and verification (MRV) systems, technology and know-how. Australia is a lead partner and donor to the Global Forest Observation Initiative, an international partnership helping developing countries to accurately estimate emissions from deforestation through the development of MRV technologies and guidance</p> <p>Clean Energy Solutions Centre The solutions centre is an initiative of the Clean Energy Ministerial (CEM), a global forum to share best practices and promote policies and programmes that encourage and facilitate the transition to a global clean energy economy The solutions centre is co-led and co-funded by the United States Department of the Environment through support from the United States Department of State, and the Australian Department of Industry, Innovation and Science. Power Africa also provides support for solutions centre activities in sub-Saharan Africa such as the Ask an Expert Service. As the solutions centre operating agency, the National Renewable Energy Laboratory (NREL) is responsible for analysis, and all other products and services provided by the solutions centre. NREL also coordinates activities with the many solutions centre partners. The solutions centre offers no-cost expert policy assistance, webinars and training forums, clean energy policy reports, data, and tools provided in partnership with more than 35 leading international and regional clean energy organizations. The Ask an Expert Service provides no-cost clean energy policy assistance through a global network of over 50 experts for government agency representatives and the technical institutes assisting them</p> <p>IEA Climate Technology Initiative (CTI) The CTI technology collaborative programme (TCP) provides a framework to bridge the gap between investors and clean energy projects in need of financing. In 2013-2014, it saw 19 project deals completed (190 MW capacity) which could result in a CO₂ emission reduction of 302,000 tonnes per year. Sharing best practices, knowledge, tools and financing options are important steps in accelerating the development and diffusion of clean technologies. For these reasons, CTI TCP developed the Private Financing Advisory Network (PFAN), a multilateral activity dedicated to reducing greenhouse gas (GHG) emissions by bridging the gap between investors and clean energy projects in need of financing. Promising projects are identified at an early stage of development, professional assistance is provided through the preparation of a financially sound business plan and investors are introduced to mature projects The focus of CTI clean technology projects reached financial closure during 2013-2014*</p> <p>International Savanna Fire Management Initiative (AUD 2.5 million) This initiative, a United Nations University Institute of Advanced Studies (UNU-IAS) project funded by the Australian Government, draws from the successful Australian experience of methodology-based, community-led savanna fire management that, through the sale of carbon credits generated, has created income for remote indigenous communities, reduced emissions and protected biodiversity in the tropical north of Australia The initiative has been building an evidence base that will enhance the understanding of the feasibility of similar community-led savanna fire management approaches in other fire-prone savanna regions of the world and in so doing aims to empower local communities and governments to identify and pursue savanna fire management opportunities The UNU-IAS project is testing how Northern Australia's experience of savanna burning projects can be used in other countries</p> <p>Vietnam Climate Innovation Centre (AUD 3 million) An initiative of the World Bank's Climate Technology Program helping Vietnamese entrepreneurs to commercialize innovative mitigation and adaptation technologies through business mentoring, grant financing, and technology access support. Over four years, the centre aims</p>	<p>Global - operates through NREL Mitigation - clean energy Online knowledge platform: analysis; tools; training forums Policy assistance through a global network</p> <p>Global - UNU-IAS project Mitigation and adaptation Agriculture Knowledge development and sharing Public and private</p> <p>National - Information for Development Programme - World Bank Mitigation and adaptation</p>

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>to support to 48 local clean-technology businesses, give 1,700 household access to new and improved products and services, and avoid 1,000 tons of CO₂ emissions</p> <p>Global Forest Observation Initiative (AUD 10.1 million) An international partnership helping developing countries to accurately estimate emissions from deforestation through the development of measurement, reporting and verification technologies. Australia is a lead partner in the Global Forest Observation Initiative with Norway, the United States of America, the Committee on Earth Observation Satellites and the Food and Agriculture Organization of the United Nations (FAO)</p> <p>The work of the Global Forest Observation Initiative is undertaken by the following components: (i) Methods and guidance Documentation: to provide options and support to countries in the use of ground observations and remotely sensed data and methodologies for the establishment of their national forest monitoring and carbon tracking systems, focused on addressing REDD-plus objectives in compliance with International Panel on Climate Change <i>Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories</i> (ii) Coordination of satellite data supply: the Committee on Earth Observation Satellites coordinates the world's civil space agencies and has taken on the leadership of this component to support the supply of data to participating countries (iii) Capacity-building: to help nations to develop a capacity to utilize Earth observation data in a credible national forest monitoring system that can provide input to national MRV systems for GHG emissions and removals in International Panel on Climate Change-compliant reporting to the UNFCCC, REDD-plus and future carbon markets</p> <p>Bilateral: 3 Mitigation: 2 - 1 in energy (Latin America) and 1 in forestry (mostly Asia); Latin America Adaptation: 1 in meteorology (Pacific) Mitigation and adaptation: 1 in forestry (Africa)</p>	<p>Entrepreneurs - commercialization Business mentoring Financial</p> <p>Global Mitigation Knowledge: guidance on methods and technologies, data supply Capacity-building</p>
Austria	<p>Technology for mitigation and adaptation is a component of many of the programmes and projects supported by Austria's climate finance commitments. The Austrian Development Cooperation has a strong focus on sustainable energy, in particular hydro and solar power as well as in the dissemination of decentralized renewable energy solutions. Furthermore, it supports initiatives by Austrian enterprises in developing countries. Most frequently, the fields of interest concern renewable energy (especially solar energy systems) and energy-efficient buildings. The grant funding by this 'business partnership programme' has to be matched by at least the same amount of the enterprise's own funds. This is why business partnership projects, can serve as an incubator for private investments The Austrian Development Bank has a special focus on renewable energy and energy efficiency. This includes financing for the construction of hydro, solar, wind and geothermal plants. In addition, the bank provides credit lines to local financial institutions and advisory services, for example to enable local borrowers to implement measures for enhancing energy efficiency, address environmental and social issues and introduce training measures for local banks</p> <p>The Austrian Ministry of Agriculture, Forestry, Environment and Water Management undertakes concrete cooperation projects in partner countries, for example to enhance mitigation and adaptation measures in forestry, including software training, technical mentoring and guidance. Further initiatives of the Austrian Government, for example the joint environmental-technologies initiative of the Federal Ministry of Agriculture, Forestry, Environment and Water Management and the Federal Economic Chamber, support export oriented small- and medium-sized enterprises (SMEs) and hence support technology transfer. Austria is member of institutions and initiatives that focus on research and transfer of technology, for example CTI, PFAN and the Renewable Energy and Energy Efficiency Partnership (REEEP)</p> <p>Economic Community on West African States (ECOWAS) Centre for Renewable Energy and Energy Efficiency (ECREEE) In order to accelerate the uptake of renewable energy and energy efficiency (RE & EE) technologies, the ECOWAS Council of Ministers created ECREEE, a unique regional renewable energy and energy efficiency promotion agency in sub-Saharan Africa. ECREEE started its operation in 2010 with initial support of the Austrian and Spanish Governments and technical assistance from the United Nations Industrial Development Organization (UNIDO). The secretariat of ECREEE is based in Praia and maintains a network of national focal institutions among all ECOWAS countries. ECREEE aims to establish regional renewable energy and energy efficiency markets by supporting various activities to mitigate existing barriers for the dissemination of these technologies. The ECREEE activities include policy development, capacity-building, awareness-raising, knowledge management as well as business and investment promotion. Further information is available at <www.ecreee.org></p>	<p>Regional Mitigation - energy Policy development Capacity-building Finance (small grants) Technical assistance Grant co-funding of small- and medium-sized projects and businesses (community; municipal; non-governmental organizations (NGOs); government institution; company)</p>

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>The East African Centre for Renewable Energy and Energy Efficiency (EACREE) is a new centre, which will act as a regional think tank and focal point for sustainable energy activities and help to strengthen activities in the field of policy and capacity development, knowledge management and awareness-raising, investment and business promotion</p> <p>EACREE is supported by UNIDO and the Austrian Development Agency, and is part of the Global Network of Regional Sustainable Energy Centres. The network currently includes EACREE, ECREEE based in Cabo Verde, and the Caribbean Centre for Renewable Energy and Energy Efficiency in Barbados. The Pacific Centre for Renewable Energy and Energy Efficiency and the Southern Africa Development Community Centre for Renewable Energy and Energy Efficiency are expected to be launched by the end of 2016. The new centre is now operational at the Makerere University College of Engineering, Design, Art and Technology in Kampala</p>	<p>Regional Mitigation – energy Policy development Capacity-building Finance (small grants) Technical assistance Grant co-funding of small and medium-sized projects and businesses (community; municipal; non-governmental organizations (NGOs); government institution; company)</p>
Belgium	<p>Belgium has always included the aspect of technology transfer in its bilateral agreements. The transfer of environmentally-sound technology should allow rapid growth by developing countries, while safeguarding the general environment and natural resources</p> <p>Technology transfer and capacity-building activities mainly occurred through support for increased cooperation between universities and scientific institutions, the creation of a policy support research platform for climate change and development cooperation and the provision of training courses on climate change adaptation in French-speaking developing countries</p> <p>The bodies involved in indirect cooperation, particularly NGOs, scientific institutions and universities, also play an important role in terms of specific types of development, supplying information to the public, capacity-building and raising awareness. They receive substantial support from the Government of Belgium. Examples of measures taken to support technology transfer and access can be found in CTF table 8</p>	
	<p>Bilateral projects reported: 5 Africa: 5; Asia: 2 Mitigation: 2; 1 in hydropower; 1 in green entrepreneurship/economy, focused on small social and environmental enterprises Adaptation: 1 in buildings/housing Mitigation and adaptation: 2; 1 in agriculture and 1 in green growth</p>	
Bulgaria	<p>Despite the fact that Bulgaria is a Party included in Annex I the Convention, as a country with economy in transition status under the Convention, it has no commitments to provide financial resources and technology transfer to developing country Parties. Nevertheless, in its first biennial report, Bulgaria did report information on the provision of financial support to developing country Parties, in particular in the former Yugoslav Republic of Macedonia</p>	
Canada	<p>Technology and capacity-building</p> <p>Canada is committed to advancing the development and deployment of clean technologies in order to address the effects of climate change globally and is actively engaged in technology and capacity-building activities with developing country partners through bilateral and multilateral channels. Canada has focused efforts in a number of areas, including forestry and land-use management, clean energy, adaptation and other cross-cutting sectors</p> <p>Canada has demonstrated leadership in developing and making globally available tools to support clean energy deployment, as well as forest sector mitigation and adaptation goals. Examples of such tools include the Renewable Energy Technology Screening (RETScreen) software and the Carbon Budget Model of the Canadian Forest Sector, which are offered free of charge in multiple languages. Access to these tools is supplemented by considerable resources and training materials, including case studies, presentations, training sessions and workshops. Canada is also a global leader in the research, development and demonstration of carbon dioxide capture and storage technologies. Canada also continues to engage actively in a number of international forums whose mandates and activities focus on the advancement of clean technologies. This includes the Clean Energy Ministerial and its CESC, which provides tools, resources and advice to developing countries. Canada also engages in the CTC N through membership on its advisory board and by having a national designated entity. Canada has also engaged with PFAN, which seeks to connect viable projects with funding. Together, these activities aim to provide developing countries with support for the deployment of clean energy. In addition, Canada cooperates with a number of international partners on science and technology activities</p>	
	<p>Bilateral: Mitigation and adaptation: 3 of which: forestry: 3 (Asia and Latin America and the Caribbean) Global: RETScreen software International Smart Grid Action Network (ISGAN) PFAN</p>	

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>RETScreen software Canada has developed RETScreen software, the world's foremost clean energy decision-making software. The software, provided free-of-charge, can be used worldwide so as to evaluate the energy production and savings, costs, emission reductions, financial viability and risk for various types of renewable energy and energy-efficient technologies (RETs). The software (available in 36 languages) also includes product, project, hydrology and climate databases, a detailed user manual, and a case study based college/university-level training course, including an engineering e-textbook. RETScreen software allows decision-makers and professionals to determine whether or not a proposed renewable energy, energy efficiency or cogeneration project makes financial sense Additional details are contained in chapter 7 of Canada's sixth national communication and at the RETScreen software website: <www.retscreen.net></p>	<p>Global Mitigation - energy Software tool for projects</p>
	<p>ISGAN implementing agreement under the International Energy Agency and the initiative under the Clean Energy Ministerial. ISGAN creates a mechanism through which stakeholders from around the world can collaborate in order to accelerate the development and deployment of smarter electricity grids. ISGAN promotes a dynamic exchange of knowledge and best practices, tool development and project coordination. It aims to improve the understanding and adoption of smart grid technologies, practices and systems as well as related enabling government policies. ISGAN is formally organized as the implementing agreement for a cooperative programme on smart grids under an IEA framework In 2014, Canada hosted workshops on innovation aimed at improving the way ISGAN experts and partners communicate complex technical information to key decision-makers. Details are available on the ISGAN website: <www.iea-isgan.org></p>	<p>Global - multinational Mitigation - Energy Knowledge exchange - best practices Technical: tool development Coordination - collaboration</p>
Denmark	<p>Technological support to developing country Parties Denmark is currently not tracking technology transfer in relation to the implementation of the Convention in a systematic manner, as it does not have such detailed information on technology tracking in the electronic database for each of the projects, and therefore cannot provide the detailed information in common tabular format (CTF) table 8 with specific information on the recipient country. However, Denmark will consider including such tracking in a future revision of the reporting framework for climate finance</p>	
European Union (EU)	<p>The transfer of technologies to developing countries offers great business opportunities for the private sector, which has the potential to leverage much higher investments than can be obtained through the public sector. Private sector involvement is also a key driver of technological innovation. In the EU, more than two-thirds of spending on innovation comes from the private sector and the vast majority of technologies are owned and operated by private actors The EU supports the development and deployment of technologies in developing countries through substantial investment in innovation. It also supports the transfer of climate technologies to developing countries, although such cooperation also requires governments, private sector entities, financial institutions, NGOs, and research and education institutions in developing countries to play their part. This includes support to increase administrative capacities and explore opportunities for public-private partnerships. It also helps harness finance to leverage private funding for infrastructure projects The EU also supports new forms of partnerships and multi-stakeholder alliances between national or local authorities, enterprises and NGOs for skills development and the provision of basic services. These partnerships facilitate access to sustainable and affordable energy, water and agriculture. They develop synergies between public and private interests in technology transfer, and engage stakeholders in the development and diffusion of technology, particularly to and between developing countries Capacity-building and innovation are important and the EU works closely with governments in developing countries to help them to develop and implement policies in support of private sector involvement. The aim is to reinforce administrative capacities and support the development of legal and regulatory frameworks and guidelines for public-private partnerships</p> <p>Initiatives and programmes All development aid cooperation projects in the field of climate change, and described in the previous section, involve technology transfer activities as defined by the technology transfer framework (both hard and soft technologies considered). It is, however, in most cases impossible, within a given programme, to get a breakdown of the technology transfer activities and related financial resources CTF table 8 includes details of a non-exhaustive list of selected initiatives implemented in cooperation with developing country partners, with an important technology development and transfer component, which the EU believes are fairly representative of the overall technology development and transfer support provided by the EU</p> <p>The EU research and innovation framework The EU research and innovation framework programmes are open to participation from third countries, with 'automatic EU funding' being limited to developing countries. There are also 54 dedicated programme instruments in place in order to support specific cooperation priorities with third countries. In the Seventh framework programme (FP7) that covered the period between 2007 and 2013, 4.73% of all participation came from third countries (including developed and developing countries), which received 1.93% of all EU funding. Many of these international cooperation actions contributed to technology development in and/or knowledge transfer to</p>	

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	<p>developing countries The Horizon 2020 Programme is the ‘new’ research and innovation framework programme of the EU for 2014–2020, with a nearly EUR 80 billion budget. In order to facilitate joint knowledge creation and transfer, the Horizon 2020 Programme is also open for third country participation, and work programmes will include targeted calls to address specific research and innovation cooperation priorities jointly identified with partner countries. The Horizon 2020 Programme establishes climate action and sustainable development as cross-cutting priorities. It sets expenditure objectives of 35% and 60%, respectively, and requires monitoring and reporting of these</p>	
	<p>Renewable Electricity Cooperation is an EU/FP7 funded project aiming to develop renewable electricity generation technologies and promoting cooperation between EU partner countries and Mediterranean partner countries, which started on 1 September 2013, with a duration of four years What is Renewable Electricity Cooperation (in a nutshell): - The development, construction, testing and demonstration of three different renewable electricity systems: a building integrated photovoltaic (PV) system (ventilated facade), a hybrid (solar/biomass) micro-cogeneration ORC (Organic Rankine Cycle) system, and a hybrid concentrating solar/biomass mini-power plant - The organization of workshops on renewable electricity technologies, open to junior researchers and the public - Technology transfer and dissemination regarding the developed technologies</p>	<p>Multinational Mediterranean countries Mitigation - RE Development and demonstration - new technologies Technology transfer Public and private implementation</p>
	<p>Euro-Mediterranean Cooperation on Research & Training in Sun Based Renewable Energies is a four-year collaborative project supported by the FP7 of the European Commission. This innovative project is targeting the following objectives: - Developing new technologies in three energy field areas, namely photovoltaics, concentrated solar power and grid integration, at the EU research centres, national agencies and SMEs in close collaboration with Mediterranean partner country (MPC) universities, research organizations and SMEs from Morocco and Egypt - Testing innovative components (PV cells/modules, heliostats, etc.) under specific conditions of MPCs (irradiation, hot climate, dust, etc.) - Establishing a strong network between the EU and MPCs through the exchange of students, senior researchers/engineers for transferring knowledge and technologies - Disseminating the results of the project through the organization of scientific events open to a large grouping from universities, engineering schools and stakeholders</p>	<p>Multinational Morocco and Egypt Mitigation - solar and grid integration Development and testing of technologies - early stage Network development Knowledge dissemination Research organizations and SMEs Public and private implementation</p>
	<p>Climate change and urban vulnerability in Africa The overall objective of the project is to develop methods and knowledge to be applied to African cities in order to manage climate risks, to reduce vulnerabilities and to improve their coping capacity and resilience towards climate change. The project will explore the issues of climate change vulnerability, resilience, risk management and adaptation in selected cities in Africa with local case study partners. Its activities include: – New downscaled models of climate change – Hazards as a cascade effect of climate change – An innovative approach to vulnerability assessment and disaster reduction – Innovative multi-risk modelling – Urban planning and governance – Knowledge transfer and capacity-building – Merging different approaches</p>	<p>Multinational Africa Cities Adaptation Technical (downscaled models, etc.) Policy: urban planning and governance Capacity-building Knowledge transfer Public and private implementation</p>
	<p>Water harvesting for rainfed Africa The main objective of the project is to develop innovative appropriate water harvesting technologies for different geographical regions of rain-fed Africa. At least 10 designs of water harvesting (WH) technologies adapted to local conditions will be tested. Guidelines will be developed to facilitate stakeholder learning and action about WH technologies in different (biophysical and socioeconomic) conditions. WH presents highly adapted, flexible, easy to understand and implement, low-cost solutions to the productivity, climate adaptation and water security challenges, primarily by building water buffering capacity. WH technologies include centuries-old systems developed by local knowledge but also innovative new approaches. Together, these approaches hold great potential to boost economic development and sustain livelihoods in rain-fed Africa. However, to unlock this potential, and despite the fact that WH has over the years received substantial interest from the research community, there is still considerable need for further advancement of knowledge: The Water harvesting for rainfed Africa project will contribute to closing these knowledge gaps, as it will study local WH solutions in four study sites. The effectiveness of WH technologies will be assessed under different environmental and socioeconomic conditions, and will be modelled</p>	<p>Multinational Africa - water Development and testing of innovative water harvesting technologies adapted to local conditions Private implementation</p>

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	for various scenarios, considering drivers such as population growth, urbanization and climate change. By combining results from the four sites, the potential of WH for the whole of Africa will be assessed	
	<p>Quantifying weather and climate impacts on health in developing countries The research aims to give decision-makers the necessary time to deploy intervention methods in order to help to prevent the large scale spread of diseases such as Rift Valley Fever and malaria. The project will develop and test the methods and technology required for an integrated decision support framework for the health impacts of climate and weather</p>	<p>Multinational Ghana, Malawi and Senegal Adaptation - health Research and development and testing of methods and technology Private implementation</p>
	<p>Global public goods and challenges programme Delivering access to modern, affordable and sustainable energy/renewable energy to 6 million people. All activities financed under this initiative (such as building/improving access by installing distribution networks (including mini-grids/microgrids); the hybridisation of existing fossil fuel-based generation systems with renewable energy systems; and incorporating renewable energy systems into production methods) will be accompanied by capacity-building/training activities (when applicable) in order to ensure the transfer of know-how to the local business sector and enhance the element of ownership</p>	<p>Global - multinational Mitigation - energy access Policy: regulatory frameworks Financial: grant and loan - support local projects with the private sector Global alliance - partnerships: dialogue, coordination and coherence Private implementation Contributes to Sustainable Energy for All (SE4All)</p>
	<p>Climate Change Predictions in Sub-Saharan Africa (ClimAfrica) (EUR 3.5 million) Impacts and adaptations: ClimAfrica is an international project funded by the European Commission under the FP7 for the period 2010-2014. The ClimAfrica consortium is formed by 18 institutions, 9 from Europe, 8 from Africa, and FAO. The project coordinator is the Euro-Mediterranean Centre for Climate Change (Italy) The project's focus is, among others, on the following specific objectives: - Developing improved climate predictions on seasonal to decadal climatic scales, especially relevant to sub-Saharan Africa - Developing a new concept of a 10-year monitoring and forecasting warning system, useful for food security, risk management and civil protection in sub-Saharan Africa</p>	<p>Multinational - Africa Adaptation Climate predictions and warning systems for food security Development of improved predictions and a new concept Private implementation</p>
	<p>Mediterranean Network of Forestry Research and Innovation (MENFRI) MENFRI is a discussion and action platform in forestry encouraging scientific and technological collaboration within the Mediterranean In order to create a favourable environment for the development of an organized, innovative and job creating business sector in this region, while facing climate change, MENFRI will work on the basis of the following three main pillars: - To gather a group of multisectoral stakeholders, experts in their respective domains, as a think tank with the objective of understanding the current situation of the Mediterranean forestry sector and the possibilities and existing barriers to innovation - To favour the interchange of knowledge through the implementation of training activities on forest management (from traditional techniques to the global information system), association, business creation and the Horizon 2020 Programme on both sides of the Mediterranean - To create a network of Mediterranean forestry-related research centres, forest owners, NGOs, SMEs, investors and any other stakeholder in the need of support, ideas or knowledge to carry out initiatives of sustainable development</p>	<p>Multinational - Mediterranean Adaptation - forestry Knowledge development and sharing Network development Training Private implementation</p>
Finland	<p>Finland has specific programmes and financial arrangements for transferring environmentally-sound technologies to developing countries (see also CTF table 8). These activities consist of transferring both 'soft' technologies, such as capacity-building, creating information networks and enhancing training and research; and 'hard' technologies, such as the technology to control greenhouse gas emissions and for adaptation measures. The differences between these various technologies are not always clear Similar to climate finance in general (see chapter 6.3 of the BR. Finance; Private finance leveraged), at the moment it is possible only to report on public interventions on technology transfer as well about some that are leveraged with public support, but Finland cannot report on activities undertaken purely in the private sector. However, as an example, the industrial equipment manufacturer the ABB Group has engaged in an agreement with SE4All –initiative to provide know-how on energy-efficient standards and legislation for industrial motors and transformers In developing countries, the private sector and entrepreneurs play a key role in economic development. During the reporting period, the Finnish Fund for Industrial Cooperation Ltd. (Finnfund) financed renewable energy production projects in Honduras, Jordan and Kenya, as well as tree-planting projects in Ghana, Sierra Leone, Uganda and the United Republic of Tanzania. In addition, Finnfund has invested in several funds, which are investing in renewable and clean technologies in Central America and Africa. Finland also promotes business-to-business partnerships in environmentally-sound technologies through Finnpartnership as part of a wider set of Aid for Trade interventions Finland also supports the Energy and Environment Partnership (EEP) with Central America, a challenge fund which has established various renewable energy and clean energy projects throughout the world. The partnership recently completed its activities in Central America and Indonesia, and is currently implementing second phase scale up in Southern and Eastern Africa, Andes and Mekong countries</p>	

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	<p>Concessional credits are used primarily for environmental and infrastructure investments under national development programmes. They have been granted to waste disposal plant with the landfill gas collection system in Viet Nam, various renewable energy projects, for example, to solar PV projects in Viet Nam and Sri Lanka that provide basic energy and water services. In Ghana, Honduras, Kenya and Viet Nam, projects to improve electricity distribution in order to improve access to energy have been supported, and in China, district heating projects have been implemented to improve energy efficiency, reduce emissions and improve air quality in cities</p> <p>Since 2004, Finland has participated in the IEA CTI, which is a multilateral initiative fostering international cooperation in the development and distribution of climate-friendly technologies and practices. The principal activities of CTI include assessing technology needs, organizing seminars and training courses, facilitating technology and disseminating information. During the reporting period, it was decided that the collaboration will finish in 2015</p>	
	<p>Energy and Environment Partnership - Southern and Eastern Africa (EEP S&EA)</p> <p>The overall objective of the EEP S&EA is to contribute to the reduction of poverty by promoting inclusive and job-creating green economy and by improving energy security in the Southern and Eastern Africa regions, while mitigating global climate change. EEP S&EA is jointly funded by the Ministry of Foreign Affairs of Finland, the United Kingdom of Great Britain and Northern Ireland's Department for International Development and the Austrian Development Agency. EEP implementation started in March 2010</p> <p>Over the past four years, the EEP S&EA programme has funded over 200 projects which all aim to provide sustainable energy services to the poor and combat climate change. In order to qualify for EEP support, projects should also demonstrate high innovation in delivering energy services, facilitating technology transfer, encouraging cooperation and local stakeholders' participation in projects. EEP S&EA is funding projects in all fields of renewable energy and energy efficiency, bridging the gap between a good idea and a bankable project. The projects are selected through two funding windows from early stage to market ready projects, including last mile feasibility studies, pilots, demonstrations, commercial scale-ups, replication and rejuvenating projects</p> <p>EEP is a network that creates access for Project Developers. One of the EEP S&EA outcomes is to be an active regional partner in generating RE & EE knowledge and evidence, sharing the experiences and informing regional RE & EE policies. EEP S&EA is actively taking part in relevant RE & EE events worldwide, giving an input to policy discussions and sector development</p> <p>The Southern Africa Development Community and the East African Community are members of the Supervisory Board, which has the overall oversight of the programme</p>	<p>Regional</p> <p>Mitigation: renewable energy and energy efficiency projects</p> <p>Finance (partial grant funding)</p> <p>[Technical analysis?] (TA), including feasibility studies, and support for developing bankable projects (business and financial advisory)</p> <p>Knowledge: knowledge exchange forums</p>
	<p>EEP Mekong, Central America and Andean highlands</p> <p>This project is involved in main sector energy but covering renewable energy and energy efficiency investments in transport, industry, agriculture, water and sanitation, and waste management sectors. Partial grant funding, business and financial advisory support is provided to project developers through competitive calls for proposals for mitigation projects that increase access to sustainable energy (business development and investment preparation on renewable energy and energy efficiency). Its focus on mitigation with adaptation components in individual projects</p> <p>Both soft and hard technology transfer and development is supported</p> <p>Partial public funding (official development assistance (ODA) grants) as seed funding that is complemented by the developer's own funding (mostly private funding) and other external sources (public and private)</p>	<p>Multinational</p> <p>Mitigation - various; main sector energy</p> <p>Technical (business and financial advisory support)</p> <p>Financial - partial grant funding as seed funding</p>
	<p>Finnfund is a Finnish development finance company that provides long-term risk capital for private projects in developing countries. Apart from co-investing with Finnish companies, it can finance ventures that use Finnish technology, cooperate with Finnish partners on a long-term basis or generate major environmental or social benefits</p> <p>The terms of financing are market-related: no soft loans but risk sharing by providing long-term financing for promising projects in challenging markets, where commercial financing is hard to obtain. Funding can be in the form of equity capital, mezzanine financing or long-term investment loans. Participation is with a minority stake</p> <p>Most investments are in manufacturing; also other sectors ranging from agribusiness and power generation to telecommunications and services. Finnfund also selectively finances the local private sector through intermediaries such as private equity funds</p> <p>Financed renewable energy production projects in Honduras, Kenya and Jordan, as well as tree-planting projects in Ghana, Sierra Leone, Uganda and the United Republic of Tanzania. In addition, Finnfund has invested in several funds, which are investing in renewable and clean technologies in Central America and Africa</p>	<p>Multinational</p> <p>Mitigation</p> <p>Private projects involving Finnish companies</p> <p>Finance: long-term finance at market rates</p> <p>Also investment in funds that invest in renewable technologies</p>
	<p>Five projects reported: Asia-Pacific (small island developing States and Papua New Guinea), the Lao People's Democratic Republic and Viet Nam, and multi-country (Latin America, Africa and Asia)</p> <p>Adaptation: 3 (meteorology);</p>	

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	Mitigation: 1 (forestry) Mitigation and adaptation: 1 (forestry)	
France	<p>In addition to bilateral and multilateral development aid channels, France is also involved in many international projects and forums which generate extensive technological cooperation with a large number of stakeholders. This cooperation is intended as a transfer, in the broad sense, of the know-how, methods or tools necessary for implementing low-carbon transition technologies Since its sixth national communication, the technological situation has changed a great deal. Low-carbon sectors have been developed and deployed on a large scale especially in the renewable and energy efficiency energy sector. More and more countries want to implement these technologies, in the North and in the South, as the number of countries with a renewable energy production target is estimated at 16,413, half of which are developing countries. Bilaterally, this cooperation is carried out through work with Africa in particular, but also large emerging countries such as Brazil, China and Indonesia. This particularly consists of strategic cooperation in the renewable energy and energy efficiency sector</p> <p>In this public policy implementation phase, the private sector and decentralized cooperation play a particularly important role as operational stakeholders in developing the necessary capacities on the ground to implement low-carbon projects that support these technological transfers. French businesses and local authorities are particularly active in this area and are developing mature and innovative projects in an increasing number of countries. Through promoting the French renewable energy sector abroad and accelerating the deployment of practical solutions on the ground technological cooperation with various countries in the renewable energy field will be strengthened</p> <p>Multilaterally, France's technological cooperation is made through large international energy partnerships such as IEA and especially within the IEA international low-carbon technologies platform set up in October 2010, the CEM initiative and the International Partnership for Energy Efficiency Cooperation (IPEEC). In the wider context of making the SE4All scheme operational, it contributes to IRENA. Extensive multilateral treaties should also be mentioned, for example the Convention and the Technology Mechanism. The work of the United Nations Environment Programme (UNEP) and FAO also encourages the sharing of experience and tools required for low-carbon transition</p> <p>Technological cooperation should be understood in the broad sense, and includes the transfers of the necessary knowledge, methods or tools for implementing low-carbon transition technologies. CTF table 8 aims to show, by means of a few examples, how French public and private sectors have taken up the issues at all levels. This generates extensive technological cooperation going beyond the traditional bilateral and multilateral development aid channels</p> <p>Bilateral projects: Mitigation: 12 (Africa: 3; Asia: 5; Latin America: 4) of which 10 are privately funded and 2 are publicly funded Adaptation: 1 (Indian Ocean islands) Mitigation/adaptation: 2, a Franco-Chinese partnership in third markets, in Asia and Africa and Africa4Climate, a support programme for the definition of low-carbon climate resilient development strategies - includes a technology transfer section and a marked adaptation component</p> <p>Multilateral projects: IRENA CEM IPEEC SE4All IEA - low-carbon technology platform</p> <p>IPEEC A partnership of nations founded in 2009 by the Group of 8 to promote collaboration on energy efficiency; now includes 16 of the Group of 20 (G20) countries IPEEC provides information to decision-makers in major economies, facilitating candid discussions for exchanging ideas and experiences and helping countries to undertake joint projects so as to develop and implement energy efficiency policies and measures at a global scale. It is also a forum for member and non-member economies to share information about various bilateral and multilateral initiatives</p> <p>IRENA</p> <p>The International Low-Carbon Energy Technology Platform is the IEA chief tool for multilateral engagement on clean technologies among its member and partner countries, the business community and other international organizations. Created by IEA Ministers in 2010, the technology platform focuses its activities on three axes of action:</p> <ul style="list-style-type: none"> Engagement worldwide: sharing best practices on clean energy technologies and partnership building How2Guides: technology-specific guidance for road map development and implementation at the national/regional levels Cross-cutting analysis on selected themes relevant to multilateral collaboration on low-carbon energy technologies <p>In its activities, the technology platform aims to promote technologies that foster significant reductions in CO₂, in order to help governments to meet the goal of limiting the rise in global temperatures, in accordance with the IEA 2 Degree Scenario</p>	<p>International - G20 Information provision and exchange Facilitating dialogue Policy: Facilitating joint projects to develop and implement policies</p> <p>Multinational Engagement and partnership building Knowledge, analysis Tools: road map development</p>

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Germany	<p>Technology transfer is part of virtually all the German Government’s climate-related bilateral development cooperation projects. It is therefore not possible to report separately on finance streams used exclusively for technology transfer. CTF table 8 includes a selection of projects that reflect experience and best practice in the field of technology transfer</p> <p>Germany is also actively involved in technology cooperation through the below initiatives and through its close support for the Technology Mechanism</p> <p>The German Climate Technology Initiative (DKTI) was set up in 2011. The German Federal Ministry of Economic Cooperation and Development now has sole responsibility for DKTI. DKTI aims to accelerate the spread of technologies in order to reduce greenhouse gases and to assist adaptation to climate change in emerging economies, developing countries and transition countries</p> <p>CTCN forms the basis for more intensive cooperation in the field of climate-relevant technologies, both for reducing greenhouse gases and for adapting to climate change. It also aims to improve networking opportunities. In 2012, the German Federal Ministry for Economic Affairs and Energy established a working group on climate technology transfer, which is intended to accompany the political work on climate technology transfer on a cross-departmental basis and to involve industry and the scientific community</p>	
	<p>German Climate Technology Initiative</p> <p>The fields of technology it focuses on are renewable energy, smart grids, energy efficiency in industry and buildings, urban development, waste management and climate-friendly mobility, agriculture and water management. The German Climate Technology Initiative integrates the various instruments of technical and financial cooperation. It uses low-interest loans to create special leverage for climate change mitigation. Projects with a total volume of EUR 1.77 billion and EUR 1.93 billion were approved in 2013 and 2014, respectively. Within the Initiative for Climate and Environmental Protection, a total of EUR 10.92 billion in reduced-interest loans were approved between 2007 and 2014 for renewable energy and energy efficiency for developing countries and emerging economies</p> <p>DKTI places an increasing emphasis on technologies in which the German private sector is able to offer highly innovative and climate-friendly products and solutions to support partner countries. To this end, it specifically pools the expertise of leading German companies in the climate and environmental protection technology sector as well as the know-how of Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and Kreditanstalt für Wiederaufbau in the field of international cooperation. Only with the right combination of cutting-edge technology, finance and advice on appropriate policy frameworks is it possible to establish climate change mitigation in partner countries in the long term. This holistic approach is designed to tap into the potential of successful and competitive German companies in the growth markets of environmental and climate technologies, with the aim of supporting the development of green economic sectors in the initiative’s partner countries that are geared towards advanced climate technology and dynamic growth</p>	<p>Multinational</p> <p>Mitigation and adaptation</p> <p>Technology cooperation and transfer</p> <p>Network development</p> <p>Policy development</p> <p>TA and capacity-building</p> <p>Finance</p>
	<p>Financing programme on research cooperation in innovative climate technology</p> <p>The project aims to deepen German–Indian research cooperation and to disseminate knowledge about solar thermal electricity generation and concentrated photovoltaics (CPVs). To this end, testing and measurement equipment, calculation tools, a 64 kilowatt CPV system and a thermal energy storage facility are being installed for research purposes together with NTPC Ltd., India’s largest power company. Employees of the NTPC Energy Technology Research Alliance are being trained in the new technologies and methods in cooperation with two German research institutions. The findings obtained in the research partnership will be published. Overall the project will strengthen applied research and technology transfer activities, and enhance the practical application of research findings in specific measures. It thus supports the Indian energy sector’s low emissions development strategy and fosters global climate change mitigation. It will also help to create highly skilled jobs in the area of climate technology research in India. The programme is Kreditanstalt für Wiederaufbau grant funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety</p>	<p>National - bilateral - India - Asia</p> <p>Mitigation; renewable energy; CPVs</p> <p>Research cooperation and technology transfer (knowledge, equipment)</p> <p>Public finance</p> <p>Implementation: public and private</p> <p>Status: implemented</p>
<p>Total bilateral projects reported: Mitigation: 8 (5 in Asia and 3 in Africa) 7 are in energy and 1 in transport Adaptation: 2; 1 in Africa and 1 in LAC in water and sanitation</p>		
Iceland	<p>Iceland has bilateral agreements on development cooperation with three African states; Malawi, Mozambique and Uganda. Iceland channels half of its ODA through bilateral channels, including NGOs, and the other half through multilateral channels, including the four UNU training programmes based in Iceland, which count for 13–14% of Iceland’s overall ODA budget. These programmes both count capacity-building as well as technology transfer, depending on the training. Therefore, this section will cover both.</p> <p>Iceland has a longstanding commitment to four UNU training programmes based in Iceland: The UNU Geothermal Training Programme (UNU-GTP), since 1979, the UNU Fisheries Training Programme, since 1998, the UNU Land Restoration Training Programme, since 2010, and the UNU Gender Equality Studies and Training Programme, since 2013. The focus of the first three programmes is climate change mitigation and adaptation, and the fourth has focused in part on gender and climate change. All four programmes are directly linked to national and public institutions in Iceland and draw on their experts for lecturing and training of fellows who mostly come from the least developed countries and other developing countries. The fellows are trained in applicable science and research, relevant to their home country, and usually conduct their research with involvement from an official or research institutions in their home country</p> <p>Among the mitigation and adaptation programmes Iceland has supported through multilateral channels are the two World Bank programmes focused on the fisheries and renewable energy sectors. PROFISH aims to strengthen sustainable fisheries management, promote economic growth, ensure healthy fish stock and enhance their yield. The Energy Sector Management Assistance Programme</p>	

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	<p>(ESMAP) is a renewable energy programme within the World Bank, which assists low- and middle-income countries to increase know-how and institutional capacity in order to achieve environmentally sustainable energy solutions for low-carbon development, poverty reduction and economic growth</p> <p>As part of the World Bank's response to the Sustainable Energy for All Initiative, the bank made an agreement with Iceland to collaborate on advancing geothermal energy utilization in East Africa through a five-year project between 2013 and 2017. It is the largest initiative of its kind for promoting the utilization of geothermal energy in developing countries. In the beginning, it was foreseen that participating countries should at the end of the project have three key outputs from the project: (1) a realistic assessment of potential geothermal sites; (2) plans for further action where applicable; and (3) capacity to move forward on the basis of those plans and submit exploration drilling projects into funding pipelines. The project could extend to up to 13 countries, 8 in the East Africa Rift Valley, and is already under way in at least 7 of them. The project in the East Africa Rift Valley is implemented in cooperation with a number of private partners and institutes, including technology transfer and capacity-building to national experts and institutions in recipient countries</p> <p>UNU-GTP. The core focus of UNU-GTP is an annual six month specialized training programme initialized in 1979. New countries are continuously added in the training but care is taken not to spread the efforts too thin. Experience strongly suggests that it is necessary to build up groups of 10 or more geothermal specialists in a given country in order for technology transfer to be successful and sustainable UNU-GTP also offers an opportunity for outstanding research fellows to pursue their masters and/or doctorate through cooperation with the University of Iceland and Reykjavik University. The six-month training programme counts towards 25% of the masters in science Furthermore, UNU-GTP plans and executes annual workshops and short courses in geothermal development in selected countries in Africa (in Kenya which started in 2005), Central America (El Salvador which started in 2006), and Asia (in China in 2008). The courses are set up in cooperation with the energy entities in the respective regions. A part of the objective is to increase cooperation between specialists in the field of sustainable use of geothermal resources</p> <p>The Global geothermal development plan (GGDP) expands on previous efforts through its global scope, and its focus on test drilling. It will identify promising sites and leverage financing for exploratory drilling in order to develop commercially viable projects. The plan's initial target is to mobilize USD 500 million. Donors can participate by identifying viable projects, and through bilateral assistance, as well as by contributing to existing channels such as the Climate Investment Funds (CIFs) or the Global Environment Facility. GGDP is managed by the World Bank's longstanding programme, ESMAP. Only a global effort will pool resources to spread the risk effectively. It will let countries learn from each other, from each other's failures and successes, and apply that learning. GGDP is an ambitious initiative by ESMAP and other multilateral and bilateral development partners in order to transform the energy sector of developing countries by scaling up the use of geothermal power GGDP differs from previous efforts in that it focuses on the primary obstacle to geothermal expansion: the cost and risk of exploratory drilling. GGDP is expected to be transformational by creating global momentum in geothermal energy investments through the mobilization of substantial new concessional funding for the risky and capital intensive upstream phases of geothermal development, exploratory drilling in particular. This will catalyse investment in all other stages of the geothermal value chain in low- and middle-income countries. GGDP has led the effort to ensure USD 235 financing from the Clean Technology Fund, which has been earmarked for programmes and projects that facilitate private sector engagement in geothermal resource validation ESMAP is deploying about USD 5 million in coordination with the World Bank regional units over 2013-2016 in order to help to develop a pipeline of resource validation projects large enough to generate learning effects that will reduce the risk of geothermal development globally. Additionally, the GGDP knowledge dissemination component supports South-South exchange among client countries on geothermal science, project development and international best practices</p>	<p>Multinational Mitigation - geothermal energy Capacity-building - training Network facilitation</p> <p>Global Mitigation - geothermal energy Upstream project identification Risk sharing and transfer during the exploratory drilling phase to facilitate private sector engagement Mobilization of concessional funding Knowledge dissemination</p>
Ireland	<p>While there are very few standalone capacity-building or technology transfer projects, frequently, funding for climate related activities will also include capacity strengthening and technology related components. A climate support mapping exercise undertaken by Irish Aid identified EUR 3,761,421 in 2013 and EUR 7,937,707 in 2014 as support for activities that included climate technology transfer. The mapping exercise included activities that have a significant research component as well as activities that support new technologies Examples of technology development and transfer are mainly located in sub-Saharan Africa and include the deployment of:</p> <ul style="list-style-type: none"> · Climate forecasting systems to improve/enable accurate agricultural decisions · Research on climate adapted seeds and planting materials · Fuel efficient cookstoves and domestic thermoelectric generators · Research on agroforestry and climate smart agriculture · Testing water filtration technology for disaster risk reduction <p>Table 8 gives 10 examples of support for technology development and transfer from each of the years 2013 and 2014 The Irish Government's support for technology transfer in relation to the implementation of the Convention includes interaction through the Technology Mechanism. In 2014, Ireland also provided EUR100,000 to the Clean Technology Centre and Network which promotes</p>	

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>the accelerated transfer of environmentally-sound technologies for low-carbon and climate resilient development at the request of developing countries</p> <p>Reported bilateral projects: 20 (all in Africa) Mitigation: 8 (7 in energy and 1 in agriculture) Adaptation: 10 (7 in agriculture; 1 in early warning; 1 in water and sanitation; 1 in agroforestry) Mitigation and adaptation: 2 (both in agriculture)</p>	
Italy	<p>The deployment of low-carbon energy technologies for both adaptation and mitigation actions and an increase energy efficiency is crucial for addressing the global challenges of energy security, climate change and economic development. In fact, technology development and transfer will play an important role in order to improve resilience to climate change and to reduce GHG emissions In order to contribute actively to this process, Italy is involved in numerous bilateral cooperation activities mainly focused on the energy sector with many developing countries in Africa and in small islands developing States as well as in large emerging countries such as Brazil and China</p>	<p>33 bilateral projects listed - no information other than title, sector, country; all mitigation, majority in RE; 1 in carbon dioxide capture and storage (CCS) (China); 1 transportation (platform for data sharing); 1 retrofitting boilers in China; 2 lighting projects. Asia-Pacific: 13 (mostly small island developing States); Africa: 12; LAC: 5; Middle East and North Africa: 3</p>
Japan	<p>Joint Crediting Mechanism (JCM) Japan establishes and implements JCM in order both to appropriately evaluate contributions from Japan to GHG emission reductions or removals in a quantitative manner achieved through the diffusion of low-carbon technologies, products, systems, services and infrastructure as well as the implementation of mitigation actions in developing countries, and to use them to achieve Japan's emission reduction target Since Japan and Mongolia signed bilateral documents in January 2013 for the first time to start this mechanism, the number of partner countries has increased to 16 as of the end of December 2015. This means that the target to double the number of partner countries in three years from November 2013 has been achieved a year in advance. So far, the Joint Committee met 26 times in total, eight JCM projects are registered in four countries (Indonesia, Mongolia, Palau and Viet Nam) and 19 JCM methodologies are approved. The government continues to support the further formulation of JCM projects and to increase the number of partner countries</p> <p>Development of the Basic Framework to Diffuse Technologies Support for International Standardization and Institutional Arrangement The government has contributed to the international standardization of measuring CO₂ emissions through steel processing. The government will also propose assessing measures of energy efficiencies of light-emitting diode lights, etc., thus it will contribute to the international standardization onwards. In addition, the government will provide support on institutional arrangements for enhancing the abilities of appropriate measuring and developing standards of energy savings in developing countries</p> <p>Support for formulating low-carbon strategies and enhancing adaptive ability in developing countries with technologies and know-how of Japan</p> <p>Bilateral projects Mitigation: 12 in total (6 in Asia; 4 in LAC; 1 in Africa and 1 global in energy efficiency) Sectors: 5 in energy; 6 in forestry; 1 in agriculture Adaptation: 8 in total (7 in Asia; 1 in Africa) Sectors: 5 in disaster prevention; 2 in agriculture; 1 in water Mitigation and adaptation: 1 in Forestry in Asia/Africa</p>	
Luxemburg	<p>Luxembourg reports some information on activities related to the transfer of technology. Nevertheless, with regard to CTF table 8 (Provision of technology development and transfer support) and CTF table 9 (Provision of capacity-building support), as Luxembourg does not have an Organisation for Economic Co-operation and Development (OECD) marker for technology development, this information is difficult to disaggregate from the existing statistics. With regard to capacity-building, however, the information can be retrieved following the capacity-building marker. Consequently, for this biennial report, Luxembourg does not report CTF tables 8 and 9 With regard to the types of technologies to be transferred by companies from Luxembourg to developing countries, there are companies specialized in photovoltaic slabs and containers, others specialized in biogas installation and yet others in constructing thermo-solar boilers. It is worth mentioning that the majority of those companies operating in the field of energy, the environment and sustainable development are regrouped within the EcoInnovation Cluster of Luxinnovation, an agency linked to the Ministry of Economy. This cluster focuses on the following three topics: circular economy, mobility and sustainable cities and smart technologies. From 2013 onwards, the contacts between the EcoInnovation Cluster and Luxembourg's Directorate for Development Cooperation have intensified in order to encourage Luxembourg's companies to engage with developing countries and, more specifically in the case of renewable energy sources (RES), in Cabo Verde, where concrete opportunities and needs have been identified. It is important however to note that given the untied nature of Luxembourg's ODA, no subsidies or public tender advantages can be given by Luxembourg companies through ODA grants The following examples illustrate how Luxembourg encourages private sector activities: <ul style="list-style-type: none"> • Capacity-building activities in Cabo Verde's or Tunisia's RES training centres will create an incentive for private sector investment in clean technologies in these countries • Collaboration with companies that provide solar panels or more complex solar container systems </p>	

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	<p>In the field of agriculture and through bilateral programmes as well as through NGO projects, Luxembourg supports farmer organizations that promote endogenous capacities, try to divulge these technologies and organize training and awareness-raising seminars for this purpose</p> <p>Bilateral projects: 3 reported; in mitigation (EE, RE and waste management); 2 in Africa; 1 in Asia</p>	
Netherlands	<p>Support for technological development and transfer is an important element of the Dutch climate finance expenditures. The private sector and several knowledge institutes are partners in providing this support. The combined innovative and financial strengths of these parties are essential in meeting the challenges of climate change together with the government. An example of the strong interaction is the close collaboration with the Dutch Development Bank (FMO) in what is known as the Global Innovation Lab for Climate Finance. FMO developed an innovative climate fund, which was judged to be the best proposal out of 90 different ideas that were analysed by the Innovation Lab</p> <p>The Netherlands Enterprise Agency has various climate-relevant programmes to support sustainable economic growth in developing countries and emerging markets. These programmes focus on innovative investment projects, transfer of technology, and knowledge and skills in social and economic sectors. The main programmes are summarized below. Climate-relevant topics are also indicated for each fund</p> <p>Private sector investment programme (PSI programme) Mentioned in first biennial report, the PSI programme is a Dutch Government programme that supports innovative investment projects in emerging markets in Africa, Asia, Central and Eastern Europe and Latin America. A PSI project is an investment project, implemented by a Dutch or foreign company in cooperation with a local company in one of the eligible developing countries. Supported projects include climate-relevant initiatives such as renewable electricity production, biofuel production and crop improvement</p> <p>The Facility for Sustainable Entrepreneurship and Food Security This facility encourages public-private partnerships in the field of food security and private sector development in developing countries. Essentially, this means that government bodies, industry and NGOs or knowledge institutions form a collaborative venture with the Ministry of Foreign Affairs and, in return, can be eligible for a grant. The overall objective is to improve the food security situation and to strengthen the private sector in developing countries, in the best interests of the overall population. Given the increased understanding of the effects of climate change, also for food security, contribution to climate smart agriculture is one of the evaluation criteria of the facility. It is executed by the Netherlands Enterprise Agency</p> <p>The Sustainable Water Fund This fund is a public-private partnership facility in the field of water and sanitation, which aims to contribute to water safety and water reliability in developing countries. The fund facilitates new initiatives for cooperation with private parties. A wide array of parties within the water sector has been involved, through the Netherlands Water Partnership and the Dutch Ministry of Economic Affairs, and participated in consultations with NGOs, business, knowledge institutes and government agencies. Themes include climate-relevant topics such as efficient water usage, safe deltas and improved basin management</p> <p>Dutch Risk Reduction Team (DRR team) Climate change will increase water-related risks. The Netherlands is renowned for its expertise on water management and risk prevention, and it aims to make this knowledge available to other countries. This is why the Dutch Government together with the Dutch water sector founded the DRR team. The DRR team is able to cover the entire disaster management cycle from mitigation, preparedness and response to recovery. For instance, when a country has been struck by severe flooding and the first emergency relief workers have gone, the need for advice on how to build a sustainable and safer water future arises. In order to meet these needs with a swift response, the DRR team of experts advises governments on how to resolve urgent water issues related to flood risks, water pollution and water supply, to prevent disasters or to rebuild after water-related disasters</p> <p>Energising Development Partnership Programme (EnDev) Mentioned in the first biennial report, EnDev contributes to making local, renewable energy accessible in 24 developing countries to mainly rural and peri-urban populations, social institutions, and small- and medium-sized enterprises in Africa, Asia and Latin America. This is done by establishing economically sustainable energy solutions and distribution schemes, mainly for rural communities. More detailed information on the technology cooperation projects within EnDev is available at the EnDev website EnDev is an energy access partnership currently financed by seven donor countries: the Netherlands, Germany, Norway, Australia, the United Kingdom, Switzerland and Sweden. EnDev promotes sustainable access to modern energy services that meet the needs of the poor - long lasting, affordable, and appreciated by users. As at December 2015, EnDev worked in 26 countries in Africa, Asia and Latin America. Since 2005, EnDev has taken a leading role at promoting access to Sustainable Energy for All. GIZ cooperates closely with the Netherlands Enterprise Agency on the global programme level</p>	<p>Multinational/national Mitigation and adaptation Investment projects/financial/technical Private sector Market development</p> <p>Multinational/national/bilateral Adaptation - climate smart agriculture one of the criteria Supports public-private partnerships - entrepreneurship focus Financial: grants Technical/business advisory services</p> <p>Multinational/bilateral Adaptation-relevant - water Facilitates cooperation with private parties Financial and technical support</p> <p>Multinational Adaptation - risk reduction after disasters Technical: expert advice</p> <p>Multinational - partnership programme financed by seven donor countries; includes a global programme with GIZ and the Netherlands Enterprise Agency Renewable energy access Mainly for rural communities - meeting needs of the poor Developing markets, including awareness campaigns and assisting entrepreneurs; developing markets; capacity development; project design; as well as financial assistance</p>

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	<p>Project interventions include developing markets for energy products and services; this includes targeted awareness campaigns, assisting entrepreneurs with energy-related businesses as well as transferring knowledge regarding technology and business skills, technical assistance and capacity-building. Where necessary, EnDev provides financial support to energy-related businesses in order to kick-start markets or buy down capital investments, but not for operational costs. EnDev translates national policies and local demand into detailed concepts and activities in close cooperation with country actors and their development partners. Services of the partnership programme include project identification, project design, stakeholder management, contract management, monitoring of activities, flexible combinations of capacity development measures as well as financial assistance and cooperation with other international energy access programmes</p> <p>Geothermal Alliance (National Geothermal Capacity Building Programme), Indonesia (EUR 0.71 million in 2014) Indonesia has geothermic potential at various locations, adding up to 27,000 MW. In 2008, only 1,052 MW (5%) was being used. A challenge for achieving their geothermal goals is the lack of knowledge and capacity at the provincial governments and knowledge institutes about assessing the geothermal potential and planning and developing geothermal production. The goal of this public-private partnership is to develop and strengthen the structure of human resources development, needed to provide the manpower for the development and implementation of the planned geothermal energy capacity in Indonesia A coalition of 38 countries and over 20 development and industry partners have joined forces to increase the share of geothermal energy in the global energy mix. Launched at a high-level event at the United Nations Climate Change Conference in Paris, the Global Geothermal Alliance, an initiative facilitated by IRENA aspires to achieve a 500% increase in global installed capacity for geothermal power generation and a 200% increase in geothermal heating by 2030 The Global Geothermal Alliance offers a partnership platform among governments, international financing institutions, private sector investors and other stakeholders to provide customized support in addressing key challenges and to scale up geothermal energy deployment in developing countries. Areas of support would include the creation of enabling regulatory and institutional conditions for investment; the promotion of innovative financing and risk mitigation mechanisms for geothermal drilling; the design of effective incentive schemes for geothermal power supply; and capacity-building and technical assistance for the construction and operation of geothermal energy systems. serve as a platform for dialogue and knowledge-sharing among partners as well as a coalition for action to increase the share of installed geothermal electricity and heat generation worldwide</p> <p>DME Energy Sector Management Assistance Programme (2011–2014), Worldwide (EUR 5.32 million in 2014) ESMAP supports, among other things, geothermal energy capacity and resource risk mitigation through South-South cooperation (support for targeted research, design and preparation, capacity development and knowledge dissemination). The Netherlands has specific expertise on how to improve the success rate of geothermal test drilling and how to mitigate geothermal resource risks. Through a trilateral approach it will also build upon the experience of countries with a track record in geothermal development (Indonesia, Kenya, Philippines and Turkey) that are open to share lessons with peer countries in the South ESMAP is a global, multi-donor technical assistance trust fund administered by the World Bank and co-sponsored by 13 official bilateral donors. It provides analytical and advisory services to low- and middle-income countries to increase their know-how and institutional capacity</p>	<p>Global - multinational Global partnership - platform for knowledge-sharing Geothermal energy Support for creating enabling environment and incentive schemes; customized support for scale-up; promotion of financing and risk mitigation mechanisms Capacity-building and TA</p> <p>Global - multi-donor TA trust fund Energy Analytical and advisory services to low- and middle-income countries Technical assistance and policy advice to countries Knowledge products and knowledge exchange Four focus areas: clean energy; energy access; energy-efficient cities; energy assessments and strategies</p>
New Zealand	<p>During the reporting period, New Zealand contributed to technology and knowledge distribution through various initiatives. Details of support for country level ‘technology development and transfer support’ and ‘capacity building support’ is set out in CTF tables 7(b), 8 and 9 New Zealand’s contributions are not currently tracked at a level that differentiates between the provision of ‘technology development and transfer support’ and ‘capacity building support’. Therefore, the figures in CTF tables 7(b), 8 and 9 represent a combined figure for those contributions, and are replicated throughout those tables Bilateral projects: Mitigation: 16 (15 in energy and 1 in agriculture) Adaptation: 13 (6 in water and sanitation 6 in agriculture, 1 in housing) Mitigation and adaptation: 3 in agriculture</p>	
Norway	<p>Transfer of technology and know-how in order to promote the development, availability and efficiency of energy constitutes an important element of Norwegian ODA and has significant environmental co-benefits that are consistent with the promotion of the Convention. In addition, Norway supports a wide range of technology transfer and capacity-building efforts Norway has been the major donor and supporter of the CTCN under the Technology Mechanism since the start, in 2013. The Norwegian agreement with UNEP, the host of CTCN, has now been prolonged until the end of 2017 Norway is a member of institutions and initiatives that have the exchange of research results and transfer of technology as a main target, e. g. the International Energy Agency and the Climate Technology Initiative. Bilateral assistance projects are another important means for technology transfer, often even if technology transfer is not the main target From a development point of view, the issue of technology is more than the act of transferring hardware and software; it is just as much a matter of building capacity in developing countries to</p>	

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	<p>receive, use and develop technology. It is therefore very much related to capacity-building as described in chapter 6.7 of the BR. Development cooperation has an important role to play in this context, and Norway undertakes technology and research cooperation with significant elements of capacity development with a number of partner countries. This integrated approach is crucial if developing countries are to benefit from, and themselves contribute to, the development of sustainable technological solutions adapted to their specific circumstances It is challenging to track and distinguish specific technology transfer and/or capacity-building contributions.</p> <p>Global Energy Efficiency and Renewable Energy Fund (GEEREF) is an innovative fund that aims to mobilize private sector finance. By providing new risk-sharing and contributing to co-financing options, GEEREF plays a role in increasing the uptake of renewables and energy efficiency in developing countries. GEEREF is a fund-of-funds which leverages public sector funds to catalyse private sector investment in clean energy projects The key to its structure is what is called a ‘first-loss piece’. That means the public money in the fund is used as a buffer to protect the private investors. If the fund has a loss, it comes out of the public money first. That makes private investors more secure and encourages them to invest in a fund that might otherwise have seemed too risky GEEREF is managed by the European Investment Bank. Norway participated in the establishment of the GEEREF in 2008 together with the European Commission and Germany. It has supported GEEREF over a period of four years with totally NOK 110 million</p> <p>The Renewable Energy and Energy Efficiency Partnership is a market catalyst for clean energy in developing countries and emerging markets. In this role, it acts as a funder, information provider and connector for up-scaling clean energy business models REEEP invests in clean energy markets, targeting SMEs. It looks for early stage ventures employing proven technologies and business cases, while bringing new and disruptive innovations addressing local market needs. Enterprises selected for the REEEP portfolio are granted an initial financial injection to allow them to test and demonstrate the viability of their innovations in the market. PFAN then provides participants with business and strategy mentoring, and investor matchmaking to help transition projects from donor to private financing REEEP seeks and supports high potential projects that can validate promising business models and technologies. It monitors and evaluates projects to understand market opportunities and barriers to success. Enterprises in the REEEP portfolio are not about ‘business as usual’. They are testing innovations in pioneer markets at the frontiers of poverty alleviation and climate impact, and face a myriad of challenges in breaking even, much less achieving scale. Analysing and understanding these challenges and how they can be overcome is the partnership’s foremost objective. It operates through its policy networks - Sustainable Energy Regulation Network (SERN); Renewable Energy in International Law (REIL); and the Energy Efficiency Coalition (EEC), which spawn networks to take national action on the topic. On the other hand, it has a process of review, evaluation and impact assessments of its projects, combined with annual meetings of the project developers and implementers to share their experiences Access to knowledge is essential for growing markets from the bottom up. REEEP works to connect knowledge to drive entrepreneurship, innovation, and policy improvements that shift markets across the developing world Beginning in 2016, PFAN will be joining UNIDO and REEEP in a ground-breaking institutional arrangement that will bring the strengths of the three organizations together toward significantly scaling up private investment in clean energy and climate change across the developing world Norway has been the second largest donor to the Renewable Energy and Energy Efficiency Partnership since 2006, and has supported it with a total of NOK 61.5 million. REEEP has supported 185 projects in 65 different countries Key lessons: (1) a proliferation of model projects accumulates their influence, yet the up-scaling effect is too limited. REEEP therefore will increasingly focus on the up-scaling process itself; (2) such networks are vitally important but we need to make them more active, use the interlinkages more and provide people-focused tools and outputs that are immediately useful for network members. On the project side, improving our analytical work and stimulating exchange between professionals have great potential</p> <p>The World Bank CCS Capacity Building Trust Fund for developing countries In 2009, Norway was the largest donor to the establishment of the World Bank CCS Capacity Building Trust Fund. The fund’s purpose is to strengthen the opportunities of developing countries to promote economic growth with low CO₂ emissions through technology cooperation that promotes the use of CO₂ capture and storage technologies in industry and the energy sector The main objectives guiding its work at the international, regional and national levels are as follows: <ul style="list-style-type: none"> • To support strengthening capacity and knowledge building to create opportunities for developing countries to explore CCS potential • To facilitate inclusion of CCS options into developing country low-carbon growth strategies and policies </p>	<p>Multinational Target: Parties not included in Annex 1 to the Convention Mitigation: RE and EE Finance: fund (public finance) providing risk sharing and co-financing Public and private implementation</p> <p>Multinational Mitigation: RE and EE Small- and medium-sized enterprises Initial grant-financing Business mentoring Investor matchmaking Early stage venture; proven technologies</p> <p>Multinational Botswana, China, Egypt, Indonesia, Jordan, South Africa, Mexico, Kosovo and the Maghreb region Mitigation - CCS Technology cooperation: – capacity-building Analysis: studies at strategic level</p>

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	<ul style="list-style-type: none"> • Work is done in cooperation with leading international and bilateral initiatives (Global CCS Institute, Carbon Sequestration Leadership Forum, IEA Programs and others) <p>The work programme consists of the following two components:</p> <ul style="list-style-type: none"> • Country-level component focusing on nine country- or project-specific activities (USD 6.9 million) • Analytical component: studies to address issues at the strategic level of importance for all developing countries and CCS related inter-regional issues <p>The support of NOK 113.5 million during 2009–2015 (primarily development assistance funds), will help to strengthen technology cooperation between industrialised countries and developing countries</p> <p>The Climate Technology Initiative</p> <p>CTI is a multilateral cooperative activity that supports implementation of the Convention by fostering international cooperation for accelerated development and diffusion of climate-friendly technologies and practices. CTI was originally established at the first Conference of the Parties in 1995. Since July 2003, CTI has been operating under an implementing agreement of the International Energy Agency</p> <p>Through a variety of capacity-building activities, CTI has promoted technology transfer to and among developing and transition countries</p> <p>CTI TCP developed the Private Financing Advisory Network, a multilateral activity dedicated to reducing GHG emissions by bridging the gap between investors and clean energy projects in need of financing. Promising projects are identified at an early stage of development, professional assistance provided through preparation of a financially sound business plan and investors are introduced to mature projects</p> <p>Other bilateral: Mitigation: 3 energy - Africa, Asia and LAC Multilateral: EnDev; IRENA, CEM and ICH (International Centre for Hydropower) Adaptation: 3 in Africa; agriculture, health and fisheries</p>	<p>Multinational: non-Annex 1 Mitigation: Renewable energy Energy efficiency Energy access Capacity-building Through CTI-PFAN: access to finance</p>
Poland	<p>Poland is not one of the Parties listed in Annex II to the Convention; therefore, it is not obliged to fulfil the commitments under Article 4, paragraphs 3–5, of the Convention</p> <p>Part B. Technology development and transfer (CTF table8)</p> <p>The GreenEvo Project is a market-based tool which serves for the transfer of Polish green technologies. It supports the identification of the technological needs of developing countries, the assessment of the capacity of Polish suppliers to meet these needs and the intermediation to broker contacts between technological companies and potential foreign customers or partners. The GreenEvo platform enables the building of relations between Polish and foreign entrepreneurs operating in the field of environmental protection on win-win principles. The project also identifies the project financing pathways for developing countries on the basis of reports and analyses of world trends. To date, in the course of 6 editions of the GreenEvo competition, 72 proven green technologies, which had been commercialized in Poland, have been selected. The companies had an opportunity to take part in the meetings with potential partners, for example in such countries as Algeria, Armenia, Azerbaijan, Belarus, Canada, Chile, China, Croatia, Egypt, Georgia, India, Iran, Kazakhstan, Malaysia, Mexico, Moldova, Nigeria, Oman, Papua New Guinea, Republic of Korea, Russian Federation, South Africa, Thailand, Turkey, Ukraine, United Arab Emirates, United States, Viet Nam and Zambia.</p> <p>Examples of specific cases of technology transfer are given in the part concerned with financial assistance</p> <p>10 bilateral projects reported - all privately funded All mitigation: 9 energy (6 in RE; 3 in EE), 1 transport Asia: 13; LAC: 6; Africa: 4</p>	
Portugal	<p>Concerning technology transfer (table XI) and considering the definition formally accepted in the UNFCCC, particularly item c, paragraphs 1 and 5 of Article 4, in several cases a PPA being implemented by the Portuguese Cooperation under the context of ODA involves technology transfer, in terms of practices and appropriate processes to each area of the PPA as well as the necessary knowledge to implement these technologies.</p> <p>Notwithstanding what was already said, it becomes difficult to specify a case due to the policy of statistical report of the OECD Development Assistance Committee that currently does not foresee a marker for the transfer of technology that allows the qualification of the PPA in this perspective or to specifically identify the technology or technologies transferred in each case. However that in the context of the approval process, one of the criteria relates specifically to the issue of technology transfer.</p> <p>The Portuguese Ministry of Environment, Spatial Planning and Energy (MAOTE) started the promotion of some activities and projects which focused on the transfer of know-how, processes and technology for these countries, in different sectors and aligned with the strategic vision for Portuguese Cooperation. The energy sector, and particularly renewables, has been a recurring commitment of the Portuguese Cooperation and two worthy examples to highlight are the projects conducted in Mozambique in the last years</p>	
Spain	<p>Listed activities are a selection of examples of the main actions carried out in 2013 and 2014</p> <p>In relation to how endogenous and technological capabilities are encouraged, include the role of the REGATTA Project supported by the Spanish cooperation that has been detailed in section 4.3. Specifically the REGATTA platform has supported the implementation of pilot projects in 5 countries in the region (Bolivia (Plurinational State of), Dominican Republic, Guatemala, Mexico and Peru) to implement examples of adaptation based on highly localized ecosystems level and incorporating endogenous technologies.</p>	

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	<p>In connection with the differentiation of activities carried out by the public or private sector, the information presented in CTF table 8 is mainly carried out by public bodies, although highlighted below the main activities that do have private sector involvement promoted by the CDTI and the SPTO.</p> <p>--> IBEROEKA : Instrument support business technological cooperation in Latin America, initiative within the Ibero-American Science and Technology for Development (CYTED) in which 19 countries of Latin America , Portugal and Spain participate --> EUREKA : European to promote business involvement , among which EUROGIA , business cluster energy technologies Programme low CO2 emissions. Likewise, the Green Growth Group (GECV) aims to promote a road map towards a low-carbon economy through various policies. Many of the companies in this group are internationalized and carry out projects abroad in sectors such as energy, transport, waste, agriculture, etc., promoting the development and transfer of technologies to developing countries</p>	
	<p>Projects Global: CEM - working group on solar and wind Regional: ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)</p>	
	<p>ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE). The main objective of this centre is to promote renewable energy and energy efficiency technologies and projects in the ECOWAS region. The start up of the centre has been mainly supported by the Spanish Agency for International Development Cooperation (AECID) and has also been technically supported by IDAE (Spanish Institute for the Diversification and Saving of Energy). More information can be found at <www.ecreee.org>. In 2013, ECREEE, Casa Africa and the Instituto Tecnológico de Canarias S.A. (ITC) released a publication called "Renewable Energy in West Africa: Status, Experiences and Trends". This publication is a contribution from ECOWAS to the goals of the United Nations Sustainable Energy For All (SE4ALL) Initiative by 2030. IDAE contributed with one of the chapters of the publication.</p>	
	<p>Regional Gateway for Technology Transfer and Climate Change Action in Latin America and Caribbean (REGATTA project) - UNEP 013. REGATTA s project is implemented by UNEP and supported mainly by Spain and other donors. Its main objective is to strengthen capacity and knowledge-sharing of climate change technologies and experiences for adaptation and mitigation in Latin America and the Caribbean. The three main components are: an online knowledge platform; key institutions and regional centres of knowledge and technology; and specific assistance in mitigation and adaptation to climate change. Activities carried out in 2013 can be found at <http://www.cambioclimatico-regatta.org/index.php/es/>. REGATTA is designed to help coordinate Latin American Countries regional and subregional networks and initiatives on climate change. REGATTA offers additional support through a broad range of capacity-building activities and advisory services. Through these activities, REGATTA aims to improve effectiveness and cooperation in existing networks and initiatives by bridging remaining gaps and facilitating coordination</p>	<p>Regional Mitigation + adaptation Network coordination Knowledge-sharing/platform TA</p>
	<p>LATIPAT database (patents) - LAC 2013. The Spanish Patent and Trademark Office (OEPM), together with the World Intellectual Property Organization (WIPO) and the European Patent Office (EPO), manages this database, which contains more than 1.5 million bibliographic data, and over a thousand images, concerning Latin American patents. This instrument has been built up over time, since its inception in 2003, into a reference global database. Besides the database the OEPM organizes several workshops on issues related to patents and intellectual property for the Latin American and Caribbean region</p>	
	<p>IBEROEKA PROJECTS (support instrument for private technological cooperation in the Ibero-American region) IBEROEKA projects is framed within the Ibero-American Programme for Science, Technology and Development (CYTED) supported by the Spanish Centre for the Development of Industrial Technology (CDTI) with the aims of combining different perspectives and visions to promote cooperation in research and innovation for the development of the Latin America region. In 2013, the programme has launched several tenders for the technological cooperation projects in the Latin American region Energy, transport, industry, agriculture, water and sanitation</p>	
	<p>Concentrating Solar Energy technology development. Project linked to international collaboration activities of the European Energy Research Alliance (EERA) Joint Programme on Concentrating Solar Power (JP-CSP) The IRP (Integrated Research Programme) STAGE- STE (Scientific and Technological Alliance for Guaranteeing the European Excellence in Concentrating Solar Thermal Energy) is an EU funded project coordinated by Spanish Centre for Energy-Related, Environmental and Technological Research (CIEMAT) and with a long list of partners (23 EU research organizations, 9 large industrial companies and 9 international (non EU) research organizations, all of them highly relevant to the field of concentrated solar power (CSP). One of the project objectives is to strengthen the collaboration with the countries with higher solar potential with regard to CSP development (countries previously indicated) by developing/assessing the technology improvements that best fit with the specific environmental conditions of such countries. Implementation schedule: February 2014–January 2018</p>	

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>Brazil, Chile, China, India, Libya, Mexico, Morocco, Saudi Arabia and South Africa Public</p> <p>Concentrating solar energy technology development Transfer to the countries participating in the network experience in Spain in the field of solar thermal concentration systems (SSTC) , through seminars, courses and events dissemination of knowledge and technology The thematic network Concentrating Solar Power for Latin America (ESTCI, <www.redcytedestci.org>) belongs to the set of thematic networks of Ibero-American CYTED (Science and Technology for Development , <www.cytcd.org >) and its main objective is to promote the use of SSTC in the Latin American countries participating in the network Argentina, Brazil , Chile, Colombia, Mexico Public</p> <p>Technology Alerts - Global Technology Alerts provide up-to-date information about the most recent patents being published around the world related to a particular technical theme. The thematic areas of each alert are established in collaboration with the technology platforms to ensure that they address the specific information needs of companies and public research institutions in the different technology sectors. Once a theme of interest is determined, the patent examiners establish a search strategy to enable any user to consult the Alert to find out about the latest patents published in any country in the world related to the theme in question, including geothermal energy, solar thermal energy concentration, fuel cells (OEPM)</p> <p>Bilateral projects (some projects may target more than one country): Mitigation: 5 (5 in Asia 5, 2 in Africa) Sectors: renewable energy and 1 multiple sectors Adaptation: 7, in early warning, weather and climate (5 in LAC and 3 in Africa)</p>	
Sweden	<p>There are no specific markers or codes for technology transfer, making it difficult to single out components integrated in these contributions. CTF table 8* is thus only a list of examples, and is not complete Several government agencies have been tasked to implement the strategy by facilitating and improving conditions for the Swedish environmental technology sector to grow. These include the Swedish Energy Agency, the Swedish Agency for Economic and Regional Growth and the Swedish Trade and Invest Council (semi-governmental). The Swedish Trade and Invest Council is working to facilitate exports by Swedish companies, in areas such as waste management, recycling, bioenergy, solar power, wind power and energy efficiency Sweden considers the private sector to have an important role to play in technology development and diffusion. However, in order to create the necessary conditions for involvement in developing countries, support is often required to reduce associated risks, for which purpose loans and guarantees or risk credit can be used From a development point of view, the issue of technology is more than the physical transfer of hardware or software, it includes developing capacity in developing countries to receive, use and develop technology. Development cooperation has an important role to play in this context, and Sweden undertakes technology and research cooperation with significant elements of capacity development with a number of partner countries * CTF table 8 is incomplete</p> <p>Collaboration with the private sector The dominant global capital flows are private, and linking these to mitigation and adaptation efforts in order to manage climate change is of utmost importance. The Swedish International Development Cooperation Agency (Sida) collaborates with the private sector through several different mechanisms, including the Public Private Development Partnerships, and Challenge Funds. The Innovation Against Poverty challenge fund is an example. It is designed as a risk-sharing mechanism addressing the absence of investors ready to bear the financial risks of early entrepreneurs by stimulating investment in new market-based solutions to the problems of poverty. Many of the entrepreneurs and business models focus on climate-smart solutions</p> <p>Mobilization of private climate finance The Swedish Ordinance for Financing of Development Loans and Guarantees for Development Cooperation regulates governmental action in this area. Under this regulation the Swedish Government has followed a strategy with a special focus on environmental loans for the period 2009–2014. This has provided opportunities to expand and leverage available resources for development by linking grant aid with market financing. The level of subsidy for development loans is a maximum of 80%, defined as the Sida grant in relation to the total amount financed (including the Sida grant plus borrowing from markets). Guarantees allow for mobilizing capital, including partner countries’ domestic capital. The guarantee facility is essentially designed to overcome a market failure, and allows markets to better understand the true level of risk associated with particular investments. Sida can help lenders to deal with these risks by insuring eligible projects against losses related to any market</p>	

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>risks. If the borrower fails to repay their bank loans, Sida will cover part of the loss. This leveraging is calculated for each project, following the OECD Development Assistance Committee's methodology</p> <p>Interact Climate Change Facility (ICCF)/Swedfund Through Swedfund, Sweden's Development Finance Institution, Sweden invests in growth companies in developing countries. The investments shall be sustainable financially, environmentally, socially, and shall be climate-smart. Swedfund seeks to establish sustainable and profitable companies in these markets in order to contribute to poverty reduction. Since 2009, Swedfund has administered Swedpartnership (previously StartSyd and StartÖst). Swedpartnership offers SMEs financial support for investments in knowledge transfer and equipment when establishing new businesses in developing countries in Africa, Asia, Latin America and Eastern Europe In 2014, Swedfund increased its financial commitment to ICCF by investing a further EUR 5 million in climate change projects in growth markets. ICCF is financed by Swedfund and several other development finance institutions. As of year-end 2014, Swedfund had committed EUR 14.4 million. ICCF finances projects in renewable energy and energy efficiency in existing power generation plants. By demonstrating the economic viability of projects, ICCF also aims to act as a catalyst and attract additional financing for the development of sustainable energy in emerging markets</p>	<p>the OECD Development Assistance Committee's methodology</p>
<p>Switzerland</p>	<p>Most Swiss programmes and projects, which support developing countries in their endeavours to mitigate and adapt to climate change, contain a technology transfer and a capacity-building component. Technology transfer and capacity-building are critical means of implementation to ensure the sustainability of a project or programme, in particular in the area of infrastructure financing and the development of local markets and products. Due to the integrated character of technology transfer and capacity-building, it is hardly possible to single out the respective components. In addition, it would not do justice to the integrated approach underpinning Switzerland's climate change interventions. Therefore, the technology transfer and capacity-building components of Swiss-funded projects are not systematically identified.</p> <p>Since 2012, the State Secretariat for Economic Affairs of Switzerland has been one of the main partners of the UNIDO global Resource Efficient and Cleaner Production Programme that applies and disseminates cleaner production methods in order to support developing and transition countries on their way toward green growth. The programme aims to increase the efficiency of energy and resources used in industrial production and to improve companies' environmental performance</p> <p>Bilateral 1 reported project in Africa in energy efficiency</p>	
<p>United Kingdom of Great Britain and Northern Ireland</p>	<p>Many International Climate Fund (ICF) programmes actively support some form of technology development or transfer (see table 5 in annex in the BR). These include:</p> <p>(i) Renewable Energy and Adapting to Climate Technologies (REACT), a window of the Africa Enterprise Challenge Fund (AECF) which aims to stimulate private sector investment in developing and delivering low cost, clean energy and climate adaptation technologies, such as solar power, biogas, irrigation and water efficiency measures. Provisional estimates are that with the help of this funding, by 2015, REACT will have helped to deliver access to cheaper, cleaner energy technologies to 200,000 people. The United Kingdom is contributing GBP 11 million to the REACT programme. It is open to business ideas based on low cost clean energy solutions that help smallholder farmers adapt to climate change</p> <p>AECF is a USD 244 million challenge fund capitalized by multilateral and bilateral donors (AECF donors) to stimulate private sector entrepreneurs in Africa in order to innovate and find profitable ways of improving access to markets and the way markets function for the poor, particularly in rural areas. The fund awards grants and repayable grants to private sector companies to support innovative business ideas in agriculture, agribusiness, renewable energy, adaptation to climate change and access to information and financial services. Its purpose is to improve the incomes of smallholder farmers and the rural poor. AECF is supported by the Governments of Australia, Denmark, the Netherlands, Sweden and the United Kingdom, as well as the International Fund for Agricultural Development</p> <p>Climate Innovation Centres (CICs): The United Kingdom is investing around GBP 24 million in the establishment of national climate innovation centres in order to accelerate locally owned and developed solutions to climate change. United Kingdom funding will support job and enterprise creation; the development of locally-relevant technologies for poorer consumers; the deployment of technologies that help to reduce/avoid GHG emissions; and the improvement of the resilience of the population. The funding is supporting CICs in Ethiopia, Kenya and Viet Nam as well as the design of up to 11 new CICs and the establishment of a global network to facilitate cross-learning and to make individual CICs more interconnected and efficient. CICs are expected to support hundreds of businesses developing and deploying locally relevant climate technologies</p> <p>Green Mini-Grids (GMGs) Africa: The United Kingdom is providing GBP 75 million for this programme that aims to increase energy access in Africa through creating the expanding deployment of clean energy mini-grids. There are three main projects within this programme: GMGs Kenya; GMGs Tanzania; and a GMGs Africa Regional Facility. The outcome is creating a critical mass of experience and evidence of GMG success in two countries, coupled with improved policy and market conditions for investment in mini-grids</p>	<p>REACT Regional - Africa Mitigation and adaptation For private sector entrepreneurs (smallholder farmers) Loans (zero interest) and grants</p> <p>Multinational; national Mitigation and adaptation Private sector oriented; support for businesses; support for endogenous technologies and capacities Technical and financial support; capacity-building Early stage; commercialization</p> <p>Multinational; regional - Africa Energy access; green mini-grids Project preparation and credit support to GMG projects and developers in both Kenya and the United</p>

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>regionally. It is expected that the 135 GMGs in operation will provide 44MW of installed capacity, create 500 new jobs and deliver increased public and private capital flows into GMGs in Africa. The United Kingdom will provide total support of GBP 75million from ICF, of which £60m will support project preparation and leverage private investment in Green Mini-Grids (GMGs) in Kenya and the United Republic of Tanzania. The remaining GBP 15 million will support a regional facility for market preparation, evidence and policy development, and prepare for a wider scale-up of green mini-grids across Africa. Funding commenced in 2014 and will run until 2019. Both Kenya and the United Republic of Tanzania were assessed as ready to absorb capital and to achieve critical mass of GMG installation volumes and experience. Existing funds and coordination structures will be used to minimize start-up time, reduce management costs and maximize coherence. At the African regional level, the programme will develop market and regulatory conditions in other countries, and will expand sector evidence and capacity on policy, technology and business models, supporting wider market transformation</p>	<p>Republic of Tanzania Regional facility for market preparation, evidence and capacity and policy development</p>
	<p>Clean Technology Fund: The United Kingdom has provided over GBP 900 million to CTF to support the demonstration, deployment and transfer of low-carbon technology in low- and middle-income countries. The fund is expected to deliver emission reductions of 1.6 billion t CO₂ eq over the lifetime of the funded projects. CTF is building one third of the world's total CSP capacity, with the first utility scale CSP plant to be built in a developing country now providing power to 80,000 people in South Africa</p> <p>The USD 5.6 billion Clean Technology Fund, is a funding window of the CIFs. It is empowering transformation in middle-income and developing countries by providing resources to scale up the demonstration, deployment and transfer of low-carbon technologies with a significant potential for long-term greenhouse gas emissions savings</p> <p>Every CTF country has tailored its CTF investment plan to align with national development goals and to serve as a framework to coordinate activities across institutions and stakeholder groups. A total of USD 3.5 billion (over 60% of CTF funding) is approved and under implementation and expecting USD 32 billion in co-financing. CTF concessional financing, channelled through partner multilateral development banks, is boosting investor confidence and attracting significant co-financing from other sources by:</p> <ul style="list-style-type: none"> • Driving down technology costs • Supporting first-movers • Bridging financing gaps • Creating markets • Innovating private sector finance 	<p>Multinational fund Mitigation Demonstration and deployment Finance: concessional finance Technical</p>
	<p>CCS technologies: The United Kingdom is providing GBP 60 million in order to support developing countries to advance both the technical and institutional knowledge necessary to enable the deployment of CCS technologies. The United Kingdom's support is being channelled to trust funds operated by the World Bank and the Asian Development Bank. ICF finance will support CCS capacity-building through pilot projects, with the aims of demonstrating the technology and reducing the cost of technology application across the CCS chain. In particular, it will fund: the incremental financing required for CCS planning and pre-investment, capital costs for CCS units and components, and CCS related post-completion and operational activities. The trust funds will support a range of capacity-building projects in China, South Africa, Indonesia and Mexico</p> <p>The Carbon Capture and Storage Fund was established with Australia as a new single-partner trust fund under the Clean Energy Financing Partnership Facility at the Asian Development Bank in July 2009. It became a multi-partner trust fund when the United Kingdom joined in December 2012</p> <p>The fund supports: capacity development; geological investigations and environmental studies related to potential carbon dioxide storage sites; and undertaking community awareness and support programmes</p>	<p>Multinational (China, Indonesia, Mexico and South Africa) CCS Capacity-building through pilot projects Planning and pre-investment support Incremental financing of capital costs</p>
	<p>Climate and Development and Knowledge Network (CDKN): This initiative has received a GBP 52 million contribution from the United Kingdom from 2013 to 2015. Launched in 2010, it is supporting 74 developing countries to build their knowledge, capacity and action plans on climate change. CDKN is an alliance of private and non-governmental organizations that helps decision makers to design and deliver a climate and environmental policy and programme, introduce new technologies and mobilize new funding sources</p> <p>CDKN is currently funded over a seven-year period from March 2010 to April 2017 by DFID and the Dutch Ministry of Foreign Affairs. We are changing from a dual Anglo-Dutch programme to becoming a multi-donor funded entity to ensure the long-term sustainability of CDKN beyond 2017</p> <p>How CDKN works: Technical assistance: CDKN technical assistance service provides tailored and demand-driven support to developing country decision-makers in the</p>	<p>Global; national Climate change Technical assistance to policy-makers Advocacy Research projects - wide range Also: knowledge products, including one on low-carbon technology innovation and transfer including the Technology Mechanism</p>

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>design and delivery of climate compatible development policies and practices, and acts as a catalyst to maximize the impact of increasing flows of donor climate and development funding</p> <p>Advocacy: It works with the leaders and negotiators of developing countries to help them to become better informed and more skilled at negotiating, as well as to become more active, networked and influential actors in the international climate change talks. Only once they have a strong voice and can exert their influence in the international negotiating arena will more robust, progressive and equitable outcomes be possible for all Parties</p> <p>Research: CDKN supports a wide range of demand-led, policy-relevant, applied research projects, led and implemented by a wide range of universities, private sector partners, NGOs and international agencies. We look for projects which not only demonstrate scientific excellence, but which also clearly respond to identified developing country needs and demand and promise high policy impact. We value innovative, game-changing research within the context of climate compatible development</p>	
	<p>Energy Sector Management Assistance Programme: The United Kingdom is providing GBP 16 million to help developing countries to increase their renewable energy capacity in order to drive growth and wealth creation. ESMAP is a demand-led renewable energy resource mapping programme that aims to support the scale up of renewable electricity generation by providing governments and commercial developers with better information on the location and economic viability of potential areas for development. ESMAP will strengthen the knowledge and evidence base, including the publication of 100 new research and knowledge products</p>	
	<p>Securing policy commitments in order to accelerate low-carbon technology deployment through multilateral initiatives: A key barrier to the wider deployment of low-carbon technology globally is a lack of wider international commitment to low carbon. The United Kingdom works broadly at a series of international forums in order to create the right regulatory environment and conditions for investment, in particular making the economic case</p> <p>The Party also supports the UNFCCC regime's work to support low-carbon technology deployment. This is done so through the Technology Mechanism (the CTCN and the Technology Executive Committee), which aims to support and facilitate the development and deployment of low-carbon technology, primarily for developing countries. We are also trying to secure broader support for a focus on phasing out fossil fuel subsidies through G20 and by working with the Friends of Fossil Fuel Subsidy Reform. This is under the UNFCCC work to raise mitigation efforts in the years leading to 2020, building on commitments agreed by G20</p> <p>The United Kingdom has continued to leverage the collective commitment of the international community in other key forums and institutions to deliver policy interventions and high-level actions that encourage the promotion of low-carbon technologies, including:</p>	
	<p>International Energy Agency – The United Kingdom has played a key role in supporting the increasing focus of IEA on low-carbon energy technology, including through support of their flagship Energy Technology Perspectives, which is the most comprehensive analysis of global low-carbon technology deployment, both in OECD and major non-OECD countries, and by supporting the analysis of fossil fuel subsidies for the IEA annual World Energy Outlook</p> <p>The United Kingdom funds various IEA implementing agreements relating to low-carbon energy, including the Renewable Energy Technology Deployment implementing agreement and active engagement in the Renewable Energy Working Party</p>	
	<p>Active memberships and the provision of funding to IRENA</p>	
	<p>Active membership of the Clean Energy Ministerial, a multilateral ministerial-level forum whose members include most of G20, to promote policies and programmes that advance clean energy technology, to share lessons learned and best practices, and to encourage the transition to a global clean energy economy. The United Kingdom supports the process by providing policy input across a range of clean and low-carbon technology interests, including the Carbon Capture Use and Storage Action Group which it co-chairs with the Government of Australia. Active membership of the Carbon Sequestration Leadership Forum and its Capacity Development Steering Committee</p>	
	<p>The United Kingdom supports SE4ALL, which was initiated by the Secretary-General and is also co-chaired by the World Bank President. The DFID Secretary of State is a member of the Sustainable Energy for All Advisory Board, and DFID provided early funding to help to develop the SE4ALL Global Tracking and Accountability Frameworks. Since 2015, the United Kingdom has provided additional support via the SE4ALL Global Facilitation Team to enhance the capability of the initiative to coordinate, facilitate and track progress towards the targets, including embedding gender considerations. Through ICF, the United Kingdom provides funding for projects which help to deliver the aims of Sustainable Energy for All</p>	

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>Bilateral: The United Kingdom participates in a wide range of bilateral initiatives through which it supports low-carbon development; many of these bilateral initiatives serve also to strengthen collaboration with the participating governments. To take two examples:</p> <p>China: The United Kingdom uses its extensive network of climate change and energy attachés, which operates throughout China in Beijing, Chongqing, Shanghai, Guangzhou, Wuhan and Hong Kong, to support China’s low-carbon development. FCO through its strategic prosperity fund and the Department of Environment and Climate Change through its memorandum of understanding with China’s National Development and Reform Commission have helped to support projects on, for instance, emissions trading, climate legislation and green finance. The Newton Fund, administered by the Department for Business, Innovation and Skills, and Research Councils UK also contribute significant funding to low-carbon research projects and initiatives</p> <p>India: The United Kingdom is sharing with India its experience in meeting the challenges of energy security, low-carbon growth and climate change, and is supporting India in its transition towards becoming a low-carbon economy. It is doing this through helping to develop its energy efficiency and renewable energy capabilities and address the adaptation needs that have arisen due to climate change. The United Kingdom supports a number of projects, including those funded by the International Climate Fund and the FCO Prosperity Fund, which aim to accelerate economic development and low-carbon transition in India</p>	
<p>United States of America</p>	<p>Since 2012, the United States has engaged in a number of activities in order to enhance the development, deployment and diffusion of climate technologies and practices to developing countries and economies in transition. table 7 provides an illustrative – though not exhaustive – list of efforts undertaken by the United States over recent years to build endogenous capacities and technologies at the national level in developing countries. At all levels of activity, the principal United States focus is to facilitate the development of the policies, regulations and overall institutional scaffolding that is required to enhance technology transfer actions</p> <p>From this perspective, the United States led the effort to create the task force on national systems of innovation (NSIs) under the policy arm of the Technology Mechanism—the Technology Executive Committee. One of the greatest advances in the climate technology domain over recent years has been the launch of the operational arm of the Technology Mechanism— the Climate Technology Centre and Network (CTCN). The United States has played a leadership role in the CTCN from its inception, with the United States Department of the Environment’s National Renewable Energy Laboratory serving as 1 of 11 regional core consortium partners from around the world</p> <p>One challenge has been the relatively low number of requests being made to the CTCN from developing country NDEs. The vision of the CTCN was that the Global Environment Facility-supported technology needs assessments would provide developing countries with the foundation from which such requests for technical assistance could be made. Another challenge has been the ability of some developing countries to attract the finance necessary to transfer, develop and deploy climate technologies successfully. In order to address this challenge, we have formalized a partnership between the Clean Energy Solutions Center (CESC) and the CTCN, and have launched a new service under CESC to assist countries in designing clean energy financial measures that will help to mobilize investment in priority technologies</p> <p>Clean Energy Ministerial This high-level global forum promotes policies and programmes that advance clean energy technology, share lessons learned and best practices, and encourage the transition to a global clean energy economy. Initiatives (such as Global LEAP, 21st Century Power Partnership, SEAD and ISGAN, described below) are based on areas of common interest among participating governments and other stakeholders</p> <p>Global Lighting and Energy Access Partnership: (1) Enhances the efficiency of the direct current (DC)-powered appliances designed for use in an off-grid context (e.g. using home-based electricity systems, often powered by a solar panel on the roof, or community-level DC power via mini grids) (2) Catalyses markets through support for quality assurance frameworks, which build consumer and investor confidence (3) Encourages market transformation towards the best, most efficient off-grid energy service technologies through its awards programme (4) Facilitates collaboration among donors in the off-grid lighting and energy access space</p> <p>Readiness for investment in the sustainable energy index Initially piloted in 17 countries (including Armenia, Chile, Ethiopia, Honduras, India, Kenya, Liberia, Maldives, Mali, Mongolia, Nepal, Solomon Islands and the United Republic of Tanzania), with plans to extend to global coverage in future years. The index: (1) Provides information on country performance in terms of the market conditions, policies, institutions, laws and regulations that contribute to an enabling environment for private investment (2) Builds on existing measures, such as the World Bank’s Doing Business Index, while identifying sector-specific barriers and incentives (3) Guides donors and developing country governments towards concrete measures for improving the enabling environment for private-sector investments in clean technologies</p>	<p>Public Energy</p>

Country	Technology development and transfer reporting by Parties: overview and summary of individual programmes and initiatives	Programme functions and characteristics
	<p>Power Africa Public and private funding; public implementation –USD 7 billion five-year pledge Power Africa employs a transaction-centred approach to directly address the constraints to project development and investment in sub-Saharan Africa’s energy sector. The model is part of United States President Barak Obama’s new approach to development, which builds local capacity and supports innovative ways to make traditional assistance programmes more effective and sustainable This initiative: (1) Provides early-stage transaction support, financing support, assistance with regulatory and policy design and reform, capacity-building, legal assistance, and other informational resources to facilitate the deployment of clean energy technologies throughout sub-Saharan Africa (2) Aims to ‘double access’ power in sub-Saharan Africa through advancing the transfer of assets from the public sector to the private sector (on- and off-grid)</p>	Regional Mitigation TA (early-stage transaction support and legal assistance) Regulatory and policy design Capacity-building Finance
	<p>Scaling-Up Renewable Energy for Low Income Countries (SREP) This programme focuses on deploying renewable energy in order to increase energy access in several developing countries, including the LDC pilot countries of Bangladesh, Benin, Cambodia, Haiti, Lesotho, Madagascar, Malawi, Mali, Nepal, Rwanda, Sierra Leone, the Solomon Islands, Uganda, the United Republic of Tanzania, Vanuatu, Yemen and Zambia</p>	Multinational Mitigation On of the CIFs Finance

Table D**Examples of innovation initiatives and lessons learned**

<i>Programme</i>	<i>Size</i>	<i>Brief description</i>	<i>Lessons learned</i>	<i>Location</i>
Stanford Biodesign		University initiative that facilitates the development of innovative biomedical solutions by providing training and support to students, faculty and fellows from a variety of disciplines	<ul style="list-style-type: none"> • By focusing on building the design capabilities of individual participants from diverse fields, the programme enables the rapid spread of its innovation methodology • The interdisciplinary nature of the teams, combined with specialized design training, pushes innovation in medical technology • While the programme's intent is primarily educational, new technology and start-ups consistently result from its work 	India, United States of America, Singapore, Japan in development
Digital Green		Non-profit organization that facilitates extension services, knowledge transfer and agricultural innovation through user-created educational videos. The aim of the programme is to improve agriculture, health and nutrition in rural parts of south Asia and sub-Saharan Africa	<ul style="list-style-type: none"> • The use of simple, low-technology equipment suggests that connective model programmes can succeed with low levels of infrastructure • The programme capitalizes on the behavioural incentives inherent in peer-to-peer connection to encourage participation • Rapid adoption rates in new country environments suggest that the model is highly scalable • Clearly defined, mutually beneficial partnerships are key to the programme's success 	Afghanistan, Ethiopia, Ghana, India, Niger, United Republic of Tanzania, Ghana
African Leadership Academy		Two-year, pre-college boarding programme that aims to accelerate African development by training and connecting students with high leadership potential. Coursework focuses heavily on entrepreneurship and leadership, and student attendees are required to develop social	<ul style="list-style-type: none"> • The focus on younger students rather than adults increases the likelihood that the resources it provides will have a longer-term impact • By securing service commitments in students' native countries, the programme ensures the dissemination of its work to environments that would otherwise be inefficient target audiences 	South Africa, draws applicants from across the African continent

<i>Programme</i>	<i>Size</i>	<i>Brief description</i>	<i>Lessons learned</i>	<i>Location</i>
		ventures or service projects as part of their academic work	<ul style="list-style-type: none"> • Students and graduates consistently start new ventures both during school and upon their return to their country of origin 	
Climate-KIC		European public–private partnership focused on mitigating and adapting to climate change. The programme connects governments, businesses, and individuals to create innovative solutions to specific climate issues, and also offers education and support for start-ups focused on climate change innovation	<ul style="list-style-type: none"> • By matching the market needs of large partners (such as corporations and municipalities) with entrepreneurs within the network, the programme is able to meet demand as needed and to allocate resources more efficiently • The rapid growth of its partner network suggests that the model is highly scalable • The programme’s ability to experiment has been helped by the fact that it has significant resources at its disposal <p>Deliberate selection of influential partners (e.g. government institutions) allows the organization to improve its environment by impacting larger policy decisions</p>	United Kingdom (HQ), network member labs across Europe
Open Ideo		Open, online innovation platform designed to facilitate the communal development of solutions to pressing global issues. The site allows users to suggest ideas, offer feedback and collaborate on new solutions	<ul style="list-style-type: none"> • It is unique among innovation incubators/organizations as a primarily online platform • Because the platform is free, Internet based, and open to the public, it has been able to engage a more diverse pool of contributors than would otherwise be possible. • The programme focuses on and promotes innovation in a broad sense, as its projects cover a variety of disciplines <p>Some success may be attributed to support by its parent corporation, which provides substantial brand capital in addition to financial and logistical resources</p>	United States
Carbon War Room		Non-profit think tank that works with businesses and industry leaders to address the market	<ul style="list-style-type: none"> • The organization reduces search costs by focusing on solutions that can be realized using 	United States, global projects include the Caribbean islands

<i>Programme</i>	<i>Size</i>	<i>Brief description</i>	<i>Lessons learned</i>	<i>Location</i>
		barriers that prevent the adoption of carbon-friendly solutions at large scale. The programme takes a multi-pronged approach, focusing on research and network engagement as well as programme implementation	<p>proven technologies rather than new and emerging ones in key sectors</p> <ul style="list-style-type: none"> • The network aspect of the programme is key to its high participation levels, as individual stakeholders tend to have strong reputational capital. • The organization's multi-modal approach, which focuses on different pathways to promoting green business solutions, encourages the cross-pollination of ideas and raises the likelihood of impact 	
Ennovent		Former investment fund that has broadened its scope to include a wide range of programmes that support bottom of the pyramid (BoP) entrepreneurs. These include research and advisory services, idea challenge management and connection to a larger network of investors, business enablers and peers	<ul style="list-style-type: none"> • The organization is able to expand its reach by offering a suite of connective services, which allows it to customize the depth of engagement with individual entrepreneurs • Partnerships with other organizations allow both actors to amplify their impact • Integrated work between offices on multiple continents promotes the inclusion of diverse perspectives 	Austria, India
Unreasonable Institute		Organization that incubates social entrepreneurs serving BoP markets at scale. Each year, the organization matches a dozen vetted ventures from around the world with 50 mentors and 100+ funders at five-week boot camps	<ul style="list-style-type: none"> • While the programme is based in the United States, its global focus has enabled it to support start-ups in 37 countries • The organization's vetting process increases the probability that participating start-ups will benefit from available connections • In addition to a network of immediate beneficiaries, the institute allows participants to connect with like-minded peers, which creates a support network that encourages later success 	United States
Quirky		Company that promotes product innovation by crowdsourcing design ideas and concepts and providing substantial assistance	By creating a community-driven pool of ideas and concepts, the company allows its engineers	United States

<i>Programme</i>	<i>Size</i>	<i>Brief description</i>	<i>Lessons learned</i>	<i>Location</i>
		with manufacture, marketing and distribution. Community members can suggest and/or vote on ideas and, depending on the level of input provided, receive financial returns	<p>and developers to focus their energies on implementation rather than conception</p> <ul style="list-style-type: none"> • While financial rewards are offered for participation, their relative smallness suggests that users are attracted as much by the community as by the prospect of profit • The company lowers barriers to participation by providing manufacture, marketing and distribution services 	
Villgro		Organization focused on supporting innovative social enterprises that have a significant impact on low-income populations. It offers a diverse suite of programmes that includes a fellowship programme, a variety of entrepreneur workshops and events, and incubation services for start-ups	<ul style="list-style-type: none"> • There is no substitute for being in the market, for knowing what potential customers value and for understanding what is available in the market • The ability to effectively engage the skills and the competencies of business partners can greatly leverage the resources available to an incubator • The programme has a laser-sharp focus on the rural space, training entrepreneurs from the rural environment who design products for their own communities • Its own definition of “innovation” is technology embodied in new goods and services that are adapted to the needs of rural populations and to the limited purchasing power of poor rural households 	India
BoP Innovation Center		Dutch non-profit focused on supporting business development for BoP markets. Services are targeted towards not only entrepreneurs and start-ups, but also investors interested in low-income market opportunities	<ul style="list-style-type: none"> • By connecting Dutch client companies to local entrepreneurs, the BoP Innovation Center reduces search costs and increases clients’ knowledge of local markets • The BoP Innovation Center’s role as a vetting intermediary increases the likelihood of immediate client ‘fit’, thus reducing the need for multiple matches 	Netherlands (HQ), Bangladesh, Ethiopia, Rwanda, United Republic of Tanzania, Ethiopia, Viet Nam

<i>Programme</i>	<i>Size</i>	<i>Brief description</i>	<i>Lessons learned</i>	<i>Location</i>
European Network of Living Labs (ENoLL)		<p>Living labs are defined as user-centred, open innovation ecosystems based on a systematic user co-creation approach integrating research and innovation processes in real life communities and settings</p> <p>ENoLL is a network of ‘experimentation environments’ that promotes innovation by allowing users and producers to work together on idea and product development. The network supports individual labs by providing them with branding, education, connections, and advisory services</p>	<ul style="list-style-type: none"> • The organization promotes transactions by reducing information risk for both foreign investors and local partners • The network design of the programme allows individual labs to share and attract more resources than they would by acting individually • By setting network-wide standards, the organization is able to ensure greater consistency and higher-quality output • The partnerships created by this model have proven valuable enough that individual labs are willing to pay for connections to other labs 	370 living labs
World Business Council for Sustainable Development		Multination corporation-led initiative to engage the global business community on relevant environmental issues. It aims to bring together business leaders to generate ideas related to, and advocate for, sustainable development	<ul style="list-style-type: none"> • The reduction in transaction costs that comes as a result of the network model enables sustainability projects by large private sector players • In addition to connections, the model helps to transfer relevant knowledge on sustainable projects and market opportunities to members • By limiting participation to members of a certain calibre, the organization creates trust between participants 	International network with 64 countries
World Economic Forum (WEF) Global Shapers		Network focused on building a more peaceful and inclusive world by connecting young	<ul style="list-style-type: none"> • By connecting high-potential participants, the organization has created a network that has expanded beyond its original scope and purpose 	International with 300 city-based hubs, focus is on local

<i>Programme</i>	<i>Size</i>	<i>Brief description</i>	<i>Lessons learned</i>	<i>Location</i>
		(under 30) leaders through local hubs. Each hub is asked to undertake projects that will have a direct impact on their local communities	<ul style="list-style-type: none"> • The WEF brand name allows participants to network and exchange ideas with a wide range of individuals • The local focus of each hub illustrates how a global organization can use the connective model to expand its work and mandate 	projects/initiatives through hubs

Table E

Indicative list of existing initiatives and activities by programmes and specialized agencies of the United Nations

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partners or multi-stakeholder participation	Other	Target recipient
FAO	Adapting irrigation to climate change	A	Agriculture		Research			Regional
International Fund for Agricultural Development	Adaptation for Smallholder Agriculture Programme (ASAP)	A	Agriculture	Finance		Partners include: CGIAR, the Global Donor Platform for Rural Development, the Adaptation Learning Mechanism, CDKN, UN CC:Learn, the World Agroforestry Centre	Channels climate finance to smallholder farmers to assist in accessing information tools and technologies in order to help to build resilience to climate change	International
UNCTAD	Science, Technology and Innovation for Development			Capacity-building			Areas of work include: science, technology and innovation policy reviews, strengthening national innovation systems, building capacity for STI policy/policymaking, Innovation Policy Learning Programme Focus is on integrating STI policies in national development strategies and building up STI policymaking capacity in developing countries. Activities are implemented in collaboration with other United Nations entities, multilateral development institutions and national counterparts	International
	National Green Export reviews (NGERs)			Technical assistance			NGERs are demand-driven, the assessments of national potential to advance the development of national green sectors to generate new employment and expert opportunities, while promoting sustainable development. UNCTAD works in partnership with countries seeking to strengthen their green economies	International
UNDP	Innovation Facility	M&A		Innovation across numerous issue areas	Focuses on idea formation, testing and scaling innovation of approaches and technologies used by the private and public sectors	Fosters Networks of Innovation Champion	Funding mechanism nurturing promising development interventions on the ground, taking a portfolio approach to compare the effectiveness of promising concepts, promoting calculated risk-taking and ‘working out loud’ to learn and identify effective ways of designing solutions around the needs of people and communities affected by development challenges. Works across all SDGs	International, regional, national

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partners or multi-stakeholder participation	Other	Target recipient
	Low Emissions Capacity Building	M		Capacity-building		Multi-stakeholder participation, including public sector and industry from high-emissions industries In collaboration with the EU, Germany and Australia, 25 participating countries	Supports NAMAs, low emission development strategies (LEDS), and Measurement, reporting and verification (MRV) as part of the UNDP larger Green, Low Emissions and Climate-Resilient Development Strategies	International, national
	Cities Initiative	M&A	Urban sustainability and resilience			In partnership with the Cities Alliance, C40Cities, UCLG, the Rockefeller Foundation, UNISDR and UN-Habitat	< https://www.undp4urban.org/ >	International focus on urban areas, online platform
UNDP-GEF	Small Grants Programme (SGP)	M&A	Community-based: energy, transport, carbon stocks, pilot efforts in community-based adaptation	Finance, technical support		List of partners available at: < https://sgp.undp.org/index.php?option=com_content&view=article&id=102&Itemid=228#.V9kwCSiLQ2w >	The programme provides grants of up to USD 50,000 directly to local communities, including indigenous people, community-based organizations and other non-governmental groups for projects in biodiversity, climate change mitigation and adaptation, land degradation and sustainable forest management, international waters and chemicals	International, community based
	Urban Infrastructure: Promoting low emission and climate resilient urban and transport infrastructure	M&A	Urban and transport infrastructure				Programme promotes the use and supply of energy more environmentally sustainable, affordable and accessible; promotes low emission and climate resilient urban and transport infrastructure	International
	Access to New Finance Mechanisms	M	Rural electrification				MDG Carbon Programme to develop CDM projects in under-represented countries. Focus is shifting towards economy of scale approaches such as NAMAs	International
	Canada/UNDP Climate Change Adaptation Facility	A	Agriculture, water, food security, education	Gender empowerment	Demonstration		Lessons learned to inform broader process < http://www.adaptation-undp.org/projects/ccaf >	Country specific
UNDP/UNEP	Poverty and Environment Initiative	A		Gender empowerment, finance, technical assistance		Works with wide range of stakeholders	Global programme that supports country-led efforts to put pro-poor, pro-environment objectives into the heart of government by mainstreaming poverty-environment objectives into national development and subnational development planning, from policymaking to budgeting, implementation and monitoring	International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partners or multi-stakeholder participation	Other	Target recipient
UNDESA	Innovation & technology programme			Assisting in formulating adopting and implementing new technology and innovation policies	Research			National, regional
	Survey of International Activities Rural Energy Access and Electrification ^a	M	Energy					Covers initiatives from 87 developing countries to scale up access to modern energy services
United Nations regional commissions-- ECA	African Climate Policy Centre			Knowledge management, advocacy and consensus building, advisory services and technical cooperation	Research, development		Hub for demand-led knowledge generation on climate change in Africa. Centre addresses the need for improved climate in Africa and strengthening the use of information for decision-making, by improving analytical capacity, knowledge management and dissemination activities Initiatives include: Young lawyers for climate change and ClimDev-Africa youth programme	National, regional
	ClimDev-Africa			Capacity-building, knowledge management	Research	Partnership building between stakeholders--part of workplan		Regional
ECA, AUC, AfDB	Investment Promotion and Facilitation			Capacity-building, finance			Enhancing skills and capacity in promoting, attracting and facilitating FDI	Regional
ESCAP	ESCAP Business Advisory Council (EBAC)		Multiple sectors and industries	Guidance and support for ESCAP programmes of work		Consists of executives and representatives of leading businesses in a wide range of industries and sectors, from across the Asia-Pacific region. It is a region-wide multi-stakeholder business forum, organized by ESCAP EBAC assisted in establishing the ESCAP Sustainable Business Network to promote active engagement of the business sector in addressing the issues of environmental sustainable and social inclusiveness in business, in the Asia-Pacific region	Business perspective on development issues in the Asia-Pacific region	Regional

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partners or multi-stakeholder participation	Other	Target recipient
	Asia and Pacific Centre for Transfer of Technology (APCTT)	M		Capacity-building	Research		APCTT is a regional ESCAP institution. It implements development projects funded by international donors aimed at strengthening the environment for technology transfer among SMEs in Asia and the Pacific. It undertakes consultancy assignments in various technology transfer related areas (institution building, human resources development, studies, business partnership development)	Regional
ESCAP	Capacity-building and train the trainer & PPP			Capacity-building				International
ESCAP in partnership with GEIDCO	MOU on strengthening collaboration and promoting SD through electricity interconnection and cooperation within North-East Asia and the Asia-Pacific region	M	Energy		Research, demonstration, knowledge-sharing	Utilizes the ESCAP knowledge-sharing platform and links experts and policy-makers from diverse member States		Regional
ESCWA	Innovation for Development			Technology information, capacity-building			Assists member countries to enhance the ecosystem of the knowledge-based economy and information society and to promote innovation and the use of modern technologies Promotes digital Arabic content Innovation score card	Member countries
	Climate change Adaptation for International Transport Networks	A	Transport	Data collection, cost analysis, best practice and risk management				Member countries
	Technology for Development						Mapping Technology Profiles of Arab region, technical and advisory services	Member countries
ECE	Sustainable Energy programme	M	Energy production, EE, RE, natural gas, coal mine methane			Programme promotes international policy dialogue and cooperation among governments, energy industries and other stakeholders	ECE work is designed to improve access to affordable and clean energy for all and to help to reduce GHG emissions and the carbon footprint of the energy sector in the region. Focus is on energy efficiency, cleaner electricity production from fossil fuels, RE, coal mine methane, natural gas, the	Member countries

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partners or multi-stakeholder participation	Other	Target recipient
							classification of energy and mineral reserves and resources and energy security	
UNEP (secretariat) Climate and Clean Air Coalition for Short-lived climate pollutants	11 initiatives	M	Transport, energy, waste, bricks, HFC, cookstoves, agriculture	Health, assessments, finance support for national action plans	Covers all stages. Focuses also on policy development and education and political engagement	Large multi-stakeholder process	Focuses on the reduction of black carbon, methane and HFCs	Global
UNEP	Climate Initiatives Platform			Knowledge-sharing			Contains 201 initiatives as at August 2016 from a broad range of stakeholders/participants	Knowledge-sharing platform
	Sustainable Buildings and Climate Initiative (SBCI)		Energy, Water			UNEP-SBCI is a partnership of major public and private sector stakeholders in the building sector, working to promote sustainable building policies and practices worldwide	Objectives include: <ul style="list-style-type: none"> Outreach and partnership activities to raise awareness of the significant opportunities for engaging the building sector in tackling climate change and increasing participation in UNEP-SBCI Framing a common language for performance assessment of energy-efficient & low-carbon buildings, as a basis for consistent global reporting of building related GHG emissions Facilitate the piloting of tools at city, portfolio and individual building levels in order to build baselines of performance by building type and climate region	Global
	Global Initiative for Resource Efficient Cities (GI-REC)		Energy, Water, natural resources, waste	Networking		GI-REC develops partnerships with key stakeholders, including local and national governments, international organizations, NGOs and private companies	Works with stakeholders to promote energy-efficient buildings, efficient use of water, sustainable waste management and other activities	
	Sustainable Social Housing Initiative (SUSHI)			Capacity-building			Promotes the use of resource and energy-efficient building solutions in social housing programmes in developing countries	Developing countries
	Resource Efficiency and Cleaner Production (RECP) Programme			Industry Energy efficiency			Activities include: information exchange, capacity enhancement and technical assistance, the Promotion of Resource Efficient and Cleaner Production strategy	
	International Resource Panel	M	various	Series on GHG mitigation			Scientists skilled in resource management	International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partners or multi-stakeholder participation	Other	Target recipient
				technologies on impacts of key energy supply and demand technologies				
	Partnership for Clean Fuels and Vehicles	M	Transport					Developing and transition countries
UNEP (secretariat), UNESCO, WMO	Global Programme of Research on Climate Change Vulnerability Impacts and Adaptation (PROVIA)	A			Research	Network of scientists, practitioners, decision-makers	Aims to provide direction and coherence at the international level for research on vulnerability, impacts and adaptation. Network works towards identifying research gaps and meeting policy needs in climate change vulnerability, impact and adaptation research	International
UNIDO	Inclusive and Sustainable Industrial Development (ISID)	M	Various sectors			UNIDO partnership approach aims to mobilize external partners and additional resources in order to extend the impact of UNIDO technical cooperation and to accelerate ISID in member States. Partners include development finance institutions, United Nations agencies, multilateral and bilateral development agencies, civil society and the private sector	ISID enhances and reinforces economic growth and diversification in a socially inclusive and environmentally sound manner. Activities focus on social inclusion, economic competitiveness and environmental sustainability	Member States
	Global Cleantech Innovation Programme (GCIP)	M	Energy	Economic empowerment	Development, demonstration	GEF, CleanTech Open	Supports SME cleantech start-ups and bolsters local entrepreneurial ecosystem and policy framework	International
	Global Network of Regional Sustainable Energy Centers		Energy, Industries	Mitigating barriers to RE and EE investment, market and industries	R&D	Cooperation with regional economic communities and organizations	Post-2015 South-South and Triangular partnership to promote inclusive and sustainable industrial development and SE4ALL	International
	Low Carbon Low Emission Clean Energy Technology Transfer Programme (LCET)	M	Energy		Development, demonstration, market formation	In collaboration with METI, Japan	Promotes rapid deployment and dissemination of Japanese LCETs globally	International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partners or multi-stakeholder participation	Other	Target recipient
	Montreal Protocol activities	M	Industry	Strengthen the private sector			Conversion of technologies, identification and application of production technologies, capacity-building	International
UNESCO	Global Observatory of STI Policy Instruments				R&D		Info on STI policies, instruments and frameworks	International
	Centres for South-South Cooperation				STI research, integration and policy advice			International
EOSG & UNOSSC	South Climate Partnership Incubator (SCPI)						Platform fostering partnerships among countries in global South in renewable energy climate resilience, smart cities and big data	International
UNOSSC	SS-GATE	M&A			Technology exchange		Platform for the identification, sharing and transfer of innovation and technologies between developing countries	International
UN-OHRLLS	Global Business Network for Small Islands			Market formation, diffusion		Designed for multi-stakeholder participation		International
WIPO	Development of national IP policies, strategies, and country plans							
	Strengthening IP infrastructure							International
	Promoting regional & subregional/regional IP programmes							International
	Developing IP outreach and public awareness programmes							International
	Capacity-building programmes to suit requirements of specific target groups, including SMEs							International
	Appropriate Technology for Development							International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partners or multi-stakeholder participation	Other	Target recipient
	GREEN	M&A		R&D to diffusion	Marketplace promoting innovation and diffusion	Broad multi-stakeholder participation	Database of green technology projects, services and IP assets. Match making	International
World Food Programme (WFP)	Purchase for Progress (P4P)		Agriculture	Finance, risk management	Across value chain	Partnership with markets	Connects smallholder farmers to markets	International
	Climate change adaptation	A					Range of adaptation initiatives: -Adaptation Fund projects -Climate Adaptation Management and Innovation (C-ADAPT) -Climate services for Africa	International
	Weather Risk Management Facility (WRMF)		Agriculture	Risk management	Across value chain		Aims to encourage and protect investments in smallholder agricultural production, and to enhance food security	International
WFP and Oxfam America	R4 Rural Resilience Initiative	R		Risk management			Enables vulnerable rural households to increase their food and income security in the face of increasing climate risks Reported through NAZCA	Senegal and Ethiopia, with pilots in Malawi and Zambia

Abbreviations: A = adaptation, AfDB = African Development Bank, AUC = African Union Commission, CDKN = Climate and Development and Knowledge Network, CDM = clean development mechanism, CGIAR = Consultative Group on International Agricultural Research, ECA = Economic Commission for Africa, ECE = Economic Commission for Europe, EE = energy efficiency, EOSG = Executive Office of the Secretary-General, ESCAP = Economic and Social Commission for Asia and the Pacific, ESCWA = Economic and Social Commission for Western Asia, EU = European Union, FAO = Food and Agriculture Organization of the United Nations, FDI = foreign direct investment, GEF = Global Environment Facility, GEIDCO = Global Energy Interconnection Development and Cooperation Organization, GHG = greenhouse gas, HFC = hydrofluorocarbon, IP = intellectual property, M = mitigation, MDG = Millennium Development Goal, METI = Ministry of Economy, Trade and Industry, MOU = memorandum of understanding, NAMAs = nationally appropriate mitigation actions, NAZCA = Non-State Actor Zone for Climate Action, NGOs = non-governmental organizations, PPP = public-private partnership, R&D = research and development, RE = renewable energy, SD = sustainable development, SDGs = Sustainable Development Goals, SE4ALL = Sustainable Energy for All, SMEs = small- and medium-sized enterprises, SS-GATE = Global South-South Assets and Technology Exchange system, STI = science, technology and innovation, UCLG = United Cities and Local Governments, UN CC:Learn = One UN Climate Change Learning Partnership, UNCTAD = United Nations Conference on Trade and Development, UNDESA = United Nations Department of Economic and Social Affairs, UNDP = United Nations Development Programme, UNESCO = United Nations Educational, Scientific and Cultural Organization, UN Habitat = United Nations Human Settlements Programme, UN-OHRLS = Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, UNOSSC = United Nations Office for South-South Cooperation, WIPO = World Intellectual Property Organization, WMO = World Meteorological Organization.

^a The survey is available at: <<https://sustainabledevelopment.un.org/content/documents/1272A%20Survey%20of%20International%20Activities%20in%20Energy%20Access%20and%20Electrification.pdf>>.

Table F

Examples of global and regional multilateral initiatives

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partner or multi-stakeholder participation	Other	Target recipient
African Development Bank (AfDB)	African Climate Change Fund	M&A		Low carbon development and climate resilience	Market formation, diffusion	Stakeholder capacity-building at the national and regional levels	<p>Aims include:</p> <ul style="list-style-type: none"> Accounting for climate change in growth strategies and policies Facilitating the development of investment plans and climate-resilient and low-carbon projects Co-finance of projects Collect, consolidate, analyse and disseminate information and learnings 	Regional (member countries)
	Enhanced Private Sector Assistance for Africa	M	Energy, infrastructure, transport	Private sector development	Development, demonstration, market formation, diffusion		Innovative, multi-component, multi-donor framework for resource mobilization and development partnership to support implementation of AfDB Strategy for Private Sector Development	Regional (member countries)
	South–South Cooperation Trust Fund	M	Agriculture, energy	Private sector development, governance, health, social development	Knowledge management, partnership promotion	Focus is on building South–South cooperation and partnerships	<p>Purpose:</p> <ul style="list-style-type: none"> Introduce and implement solutions in all focus areas that can have high development impact 	Regional (member countries)
Frankfurt School-UNEP Collaboration Centre, a UNEP facility in cooperation with AfDB and ADB	Seed Capital Assistance Facility, Phase II	M		Risk reduction	Development, demonstration	Partners with investor fund managers, enterprise development support to qualified local entrepreneurs in Africa and Asia	<p>Purpose:</p> <ul style="list-style-type: none"> Increase the availability of investment for early-stage development of low-carbon projects in developing countries, contributing to low-carbon sustainable development, economic growth, poverty reduction and climate change mitigation 	Asia and Africa
ADB	Energy for All Initiative	M	Energy	Policy dialogue, capacity-building, knowledge management		Energy for All Partnership	<p>Internal track:</p> <ul style="list-style-type: none"> Increasing Investments in Access to Energy through the development of new methodologies and approaches, engaging in policy dialogues with governments and building capacity and sharing knowledge <p>External track:</p> <ul style="list-style-type: none"> Supporting the Energy for All Partnership through the promotion of exchange of knowledge, ideas and information, replication and scaling up proven approaches and building partnerships to develop, finance and implement access to energy projects 	Regional (member countries)

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partner or multi-stakeholder participation	Other	Target recipient
	Clean Energy Financing Partnership	M	Energy	Finance policy, regulatory and institutional reforms	Deployment		Co-financing from multiple donors. Potential investments include: <ul style="list-style-type: none"> The deployment of new clean energy technology Projects lowering barriers to adopting clean energy technologies Projects increasing access to modern forms of clean and efficient energy for the poor Technical capacity programmes for clean energy 	Regional (member countries)
Latin American Energy Organization (OLADE)	South-South Cooperation Mechanism	M	Renewable energy, energy efficiency	Knowledge-sharing and dissemination	Development		<ul style="list-style-type: none"> Collaborate with the implementation of national energy policies Project experiences and good practices at the regional level by strengthening sustainable development processes implemented successfully Exploit OLADE potential to facilitate the exchange of specialists, knowledge and experience so as to promote joint efforts at the regional level to develop programmes and energy integration initiatives 	Regional, member countries
Clean Energy Ministerial	Complete list of initiatives and participants at < http://www.cleanenergyministerial.org/ >	M	Energy		Deployment of technologies, policies and practices	Public-private engagement		Country specific
Mission Innovation (MI)	Mission Innovation	M	Energy	Finance	Research	Cooperative initiative among 20 countries with private sector Initiative (Breakthrough Energy Coalition)	An online repository of information, available to MI members, is an expected deliverable	International
IEA, UNEP, ITF, ICCT, Institute for Transportation (UC Davis), FIA Foundation (host)	Global Fuel Economy Initiative	M	Transport (vehicle fuel economy)	Awareness-raising	Research	Industry participants	Monitors trends and progress	International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partner or multi-stakeholder participation	Other	Target recipient
IEA	Technology Collaboration Programmes (Implementing Agreements)	M	Energy	Information dissemination	Research, development, diffusion	Includes provisions for collaboration with non/member countries, businesses, industries, international organizations and non-government entities	Complete list of activities under the TCP is available at < http://www.iea.org/media/impag/MASTERTABLES1Jun16.pdf >	International
	Technology Roadmaps	M	Energy	Information dissemination	Research		Roadmaps represent international consensus on milestones for technology development, legal/regulatory needs, investment requirements, public engagement/outreach and international collaboration	International
Inter-American Development Bank (IDB)	Fontagro	M&A	Agriculture	Knowledge management, capacity-building, finance (seed funding)	Research, development	Cooperation with various institutions to improve food security	Strategic action areas: <ul style="list-style-type: none"> • Technological, organizational and institutional innovation • Adaptation and mitigation • Sustainable intensification of agriculture and natural resource management • Competitive value chain and territories within a framework of equity and sustainability 	Regional (member countries)—in cooperation with Spain
	Innovation, Science and Technology		Various	Capacity-building, knowledge management, innovation, private sector development, enabling environment			Focus: <ul style="list-style-type: none"> • Building institutional capacity in national innovation systems following internationally recognized best practices • Seeking to tackle clearly identified market or coordination failures • Incorporating a strong operations' evaluation process, and increasing data availability for knowledge generation 	Regional (member countries)
IDB with the Calvert Foundation	Inter-American Opportunity Facility		Agriculture	Base of the pyramid financing			USD 20 million investment partnership designed to reduce poverty and promote economic growth at the base of the economic pyramid. Provides debt financing to socially responsible financial institutions to support activities, including small business lending, education, housing development, and agricultural cooperatives across Latin America and the Caribbean. Individuals (including in the United States) can invest in the initiative through the Calvert Foundation's online	Regional (member countries)

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partner or multi-stakeholder participation	Other	Target recipient
							investment platform <Vested.org> (USD 20 minimum), through a brokerage account, or directly with the Calvert Foundation (USD 1,000 minimum).	
Inter-American Investment Corporation (part of IDB)	Infrastructure 360 Awards	M	Infrastructure	Sustainable practices, best practices		In partnership with Harvard University	Identifies, assesses and rewards infrastructure investments made by private sector and public-private partnerships in borrowing member countries with an emphasis on climate and environment, as well as leading practices in social impact, governance and innovation	Regional (member countries)
	Base Forum International			Poverty reduction, knowledge sharing		Multi-stakeholder Platform bringing companies, entrepreneurs, investors and government representatives to share lessons learned and how to continue innovating	The forum seeks to be a driver of ideas, a space to strengthen networks, and a stage for sharing new insights on the base of the pyramid market. It is held every two years, convening more than 1,000 leading companies, financial institutions, impact investors, opinion leaders, media, academics and others to share lessons learned, challenges and to strengthen the network of those who believe in the potential of this business field	Regional (member countries)
	FINPYME		Various	Technical Assistance, enabling environment			Technical assistance to SMEs. This includes: <ul style="list-style-type: none"> • Training • Technical assistance • Advisory services 	Regional (member countries)
IRENA	SIDS Lighthouses initiative	M	Renewable energy	Capacity-building, enabling environments	Deployment	Other partners: Enel, European Union, France, Germany, Indian Ocean Commission, IRENA, Japan, New Zealand, Norway, SE4ALL, United Arab Emirates, United States of America, UNDP, World Bank Group	Initiative is a framework for action aimed at programmatic deployment of renewables to enable their energy system transformation, by moving away from developing projects in isolation to a holistic approach considers all relevant elements spanning from policy and market frameworks, through technology options to capacity-building. Programmatic steps for accelerated deployment of renewables are defined and opportunities for partnerships highlighted Draws on Global Renewable Energy Islands Network while it helps to identify gaps and areas of interest	SIDS partners: Antigua and Barbuda, Bahamas, Barbados, Cabo Verde, Cook Islands, Federal States of Micronesia, Fiji, Grenada, Guyana, Kiribati, Maldives, Mauritius, Nauru, Niue, Marshall Islands, Palau, Sao Tome and Principe, Samoa, Seychelles, Solomon Islands, Saint Vincent and the Grenadines, Tonga, Trinidad and Tobago, Tuvalu, Vanuatu

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partner or multi-stakeholder participation	Other	Target recipient
	<p>Africa Clean Energy Corridor</p> <p>Also supported by several IRENA member countries outside of Africa, ECA, AfDB and by other multilateral financial institutions and development partners</p>	M	Renewable energy	Capacity-building, enabling environment	Development, market formation	Partners include: countries in the Eastern Africa and Southern African Power Pools, the African Union Commission (AUC), the Common Market for Eastern and Southern Africa (COMESA), the East African Community (EAC), the Southern African Development Community (SADC), the New Partnership for Africa's Development (NEPAD) and the African Energy Commission (AEC)	Initiative aims to transform the current fuel mix by promoting the development of clean, indigenous, cost-effective renewable power options and supporting regional social and economic growth. Countries involved are: Angola, Botswana, Burundi, Democratic Republic of Congo, Djibouti, Egypt, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, South Africa, Sudan, Swaziland, Uganda, the United Republic of Tanzania, Zambia and Zimbabwe	Eastern and Southern Africa
World Bank Group (WB)	infoDev	M&A	Agriculture, energy	Digital entrepreneurship	Development, demonstration, Market formation, diffusion		Business incubator programme for climate technology, agribusiness and digital entrepreneurship	International
	Global Agriculture & food security programme		Agriculture, water		Development, demonstration		Program provides financing to scale-up agriculture and food security assistance	International
ESMAP	Social Inclusion in the Energy Sector	M	Energy	Gender	Knowledge management		<p>Main activities:</p> <ul style="list-style-type: none"> • Detailed gender assessments in large energy infrastructure • Knowledge development and dissemination • Training • Supporting project teams 	International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partner or multi-stakeholder participation	Other	Target recipient
	Energy and climate Adaptation	A	Energy	Climate risk management	Knowledge management		Programme seeks to develop and test processes to mainstream climate risk management into energy sector planning and operations and to support awareness-raising and knowledge transfer	International
Clean Investment Funds (housed at WB) in conjunction with MDBs	Clean Technology Fund	M	Renewable Energy, transport		Demonstration, market formation, diffusion	Governed by MDB committee with stakeholder engagement platform	For middle-income countries with highly concessional resources	International
	Pilot Program for climate Resilience	A	Water resources management, infrastructure, coastal zone management, agriculture and land-use management	Enabling environment, climate information systems and disaster risk management	Development		Integration of climate resilience into development planning with additional funding to support public and private sector investments for implementation	Global, 18 countries
	Scaling Up Renewable Energy in Low Income Countries Program (SREP)	M	Renewable energy		Market formation, diffusion		Deploying renewable energy solutions for increased energy access and economic growth	International
	Forest Investment Program	M	Land use				Reduction of deforestation and forest degradation and promoting sustainable forest management	International
International Finance Corporation (IFC)	Climate Implementation Plan		Various sectors	Expertise across broad sectors	Finance	Broad range of partnerships, including civil society, development institutions, development partners and foundations	IFC blends investment with advice and resource mobilization to help private sector advance development Encourages entrepreneurship and builds sustainable businesses, providing advice on a range of issues. As part of the WB Climate Change Action Plan, IFC has four objectives to increase climate investments and maximize impact: (1) scale climate-related investments to reach 28% of IFC annual new commitments by 2020; (2) catalyse USD 13 billion in private sector capital annually by 2020 to climate sectors through mobilization, aggregation, and de-risking products; (3) maximize impact through GHG emissions reduction and resilience; and (4) account for climate risk – both the physical risk of climate impacts and the carbon asset risk in IFC investment selection	International, with private sector

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partner or multi-stakeholder participation	Other	Target recipient
Global Green Growth Institute, OECD, UNEP, WB	Green Growth Knowledge Platform	M	Agriculture, buildings, energy, fisheries, forestry, natural resources, transport, tourism, waste	Biodiversity, finance	Research		Global network of international organizations and experts that identify and address major knowledge gaps in green growth theory and practice. Encourages widespread collaboration and world-class research	International
Global Green Growth Institute (GGGI)	Green Growth Planning & Implementation	M	Energy, water, land-use. Green city development		Research, market formation, diffusion	Works extensively with in-country partners. Works with its Green Investment Services to ensure financing for its projects	Conducts macroeconomic and sectoral analyses to identify green growth opportunities, offers a comprehensive set of services based on the GGGI value chain, assists in the implementation of services and the financing mechanisms to ensure delivery	International
	GGGI Knowledge Services						Produces technical and specialist know-how for in-country programmes and global services to contribute to broader global dialogue on green growth	
Regional Centre for Renewable Energy and Energy Efficiency (RCREEE)		M	RE, EE	Knowledge-sharing, network of experts, policy dialogue			Core objectives of the centre: <ul style="list-style-type: none"> • Diffuse the implementation of cost-effective RE and EE policies, strategies and technologies in the Arab region • Increase the share of renewable energy and energy efficiency products and services in the Arab region and their share of the global market 	Regional
REN 21		M	RE	Knowledge exchange, policy development		Multi-stakeholder network connecting a range of actors, including governments, NGOs, research and academic institutions, international organizations and industry		International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Tech dev & transfer & cooperation, incl. R&D	Partner or multi-stakeholder participation	Other	Target recipient
Climate Technology Initiative (CTI) Private Financing Advisory Network (PFAN)		M&A	Various sectors	Advice and guidance, technical assistance, investor matchmaking, cost of services		A multilateral public-private partnership. A list of CTI PFAN partners can be found at < http://cti-pfan.net/partners > Also part of the Climate Technology Centre and Network	CTI-PFAN identifies promising clean energy projects at an early stage and provides mentoring for development of a business plan, investment pitch, and growth strategy. CTI PFAN provides coaching and guidance to selected projects which are then presented to investors at Clean Energy Financing Forums hosted across Asia, Latin America and Africa. As part of its activities, CTI PFAN develops partnerships in each country it enters building and expanding local in-country presence	International

Abbreviations: A = adaptation, ADB = Asian Development Bank, ECA = Economic Commission for Africa, EE = energy efficiency, ESMAP = Energy Sector Management Assistance Programme, GHG = greenhouse gas, ICCT = Interact Climate Change Facility, IEA = International Energy Agency, infoDev = Information for Development Programme, IRENA = International Renewable Energy Agency, ITF = International Transport Forum of the OECD, M = mitigation, MDB = multilateral development bank, NGOs = non-governmental organizations, OECD = Organisation for Economic Co-operation and Development, R&D = research and development, RE = renewable energy, REN 21 = Renewable Energy Policy Network for the 21st Century, SE4ALL = Sustainable Energy for All, SIDS = small island developing States, TCP = technology collaborative programme, UNDP = United Nations Development Programme, UNEP = United Nations Environment Programme.

Table G

Examples of research and development initiatives

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Stage of tech cycle	Partner or multi-stakeholder participation	Other	Target recipient
Canada	The Canadian International Innovation Program (CIIP)		All		Research and development		Stimulates bilateral science and technology networking and matchmaking activities. Is a 'seed fund', participants are also encouraged to bring science and technology expertise and funds of their own to the bilateral relationship < http://tradecommissioner.gc.ca/funding-financement/ciip-pcii/index.aspx?lang=eng >	Partner countries are: Brazil, China, India, Israel, and soon the Republic of Korea
International Science and Technology Partnerships Program (ISTPP) (Canada)	International Science and Technology Partnerships Program (ISTPP) (Canada)		No clear focus but could possibly incorporate climate technologies		Collaborative R&D funding programme	Government of Canada – bilateral engagement with Brazil, China, India and Israel	<ul style="list-style-type: none"> Funds 50% of costs of approved joint research initiatives Two separate delivery organizations: International Science and Technology Partnerships Canada (ISTP Canada) as the delivery organization for the Brazil, China and India components of the ISTPP Canada Israel Industrial Research & Development Foundation (CIIRDF) is the delivery organization for the Israeli component of the ISTPP Industry-academia links encouraged but seems mostly private-private Projects and partnership development activities – 'matchmaking' events (to generate new or expand existing research and technology-based partnerships between two countries)	Bilateral
CGIAR	Research program on policies, Institutions and Markets	M/A	Agriculture		Research	International, regional and national partners		International
	Research Program on Climate Change, Agriculture and Food Security		Agriculture		Research	International, regional and national partners		International
Practical Action, or Intermediate Technologies Development Group	Practical Action, or Intermediate Technologies Development Group	M	Improved stoves, micro-hydro, solar power, biogas, small-scale wind power		Demonstration and deployment	NGO (United Kingdom-HQ)	<ul style="list-style-type: none"> Improve efficiency and productivity of biomass use Provide small-scale, low cost, off-grid electricity options Assist communities looking for energy technology options (community engagement) 	International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Stage of tech cycle	Partner or multi-stakeholder participation	Other	Target recipient
Renewable World (formerly Koru Foundation)		M	Renewable energy		Demonstration and deployment	NGO (United Kingdom-HQ)	<ul style="list-style-type: none"> • Link between RE industry and impoverished communities • Help develop appropriate RETs • Fund, facilitate and initiate projects for RETs working with local partners 	International
United States Agency for International Development (USAID)	Global Climate Change Initiative	M&A	Adaptation, energy, land use	Low emission development, climate integration			Assists countries by investing in renewable energy sources and energy efficiency, and improving the land management of forests and natural landscapes	International
USAID, technical secretariat: United States Department of Energy (US DOE): National Renewable Energy Laboratory (NREL)	Global Climate Change Initiative's Enhancing Capacity for Low Emission Development Strategies (EC-LEDS)	M	RE, EE, land use, forest management SMART grids, energy monitoring		R&D, demonstration	Countries (United States led)	NREL: development of renewable energy technologies. PV fabrication technologies in China originally achieved via a programme with USDOE < http://www.nrel.gov/technologytransfer/ >	International and bilateral
EU Research & Innovation Framework Programme	EU framework funding for R&D	M&A	All		Research and development	Research institutions and universities in EU Member States; sometimes also third countries and private sector	<ul style="list-style-type: none"> • Extensive R&D programme, not only for climate technologies 	International and regional
India and EU Strategic Partnership	Clean Energy and Climate Partnership	M&A	Energy, clean coal technologies, EE		Knowledge-sharing	Private sector and civil society are included in discussions/knowledge-sharing activities	<ul style="list-style-type: none"> • Cooperation in the area of clean energy technologies as well as on adaptation 	Regional and bilateral
IBSA Dialogue Forum	IBSA Dialogue Forum	M	Biofuels, other RE		Demonstration, deployment	India, Brazil, South Africa	<ul style="list-style-type: none"> • Promote the production and use of biofuels • Info exchange on biofuels and RE 	Regional South-South
Energy Technologies Institute	Technology Programmes	M		Offshore wind, marine, wave and tidal, distributed energy	Development, deployment	Govt (United Kingdom) and private sector	<ul style="list-style-type: none"> • United Kingdom based company formed from global industries Commissions collaborative projects with the aim of creating affordable, reliable, clean energy for heat, power and transport	National and international
MATIMOP Israel Industry Center for R&D	MATIMOP Israel		EE, alternative energy		R&D	Govt of Israel, bilateral collaborations with several countries in Europe and Asia, as well as the United States,	Two main programme models are followed: <ul style="list-style-type: none"> • Independent binational funds, with each nation making an equal contribution 	Bilateral

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Stage of tech cycle	Partner or multi-stakeholder participation	Other	Target recipient
						Canada, Argentina and Australia Bilateral fund activities with the Republic of Korea, Singapore, the United Kingdom and the United States of America	<ul style="list-style-type: none"> Parallel support arrangements, whether binational or multinational, whereby each nation is committed to funding R&D performed by the joint venture partner company from its own country in accordance with their respective laws and regulations All international industrial R&D support programmes share similar characteristics and guidelines	
	India–Israel Initiative for Industrial R&D (i4RD)	M	RE, water, agriculture	Nanoscience /nanotechnology	R&D	Govt of India Govt of Israel	A bilateral framework providing financial support for collaborative industrial R&D ventures between Indian and Israeli companies Within the context of the i4RD bilateral framework, funding mechanisms created, through which industry, seeks support for joint bilateral research and development (R&D) projects, involving at least one Indian and one Israeli company	Bilateral
Government of India and Indian Industry, R&D Institutions	Global Innovation & Technology Alliance (GITA)I		Water, renewable energy, agriculture		R&D	PPP, not-for-profit promoted jointly by the Technology Development Board, Department of Science and Technology, the Government of India, and the Confederation of Indian Industry	Designed to encourage industrial investment in innovative technology solutions through mapping technology gaps, evaluating technologies available across the globe, forging techno-strategic collaborative partnerships appropriate for Indian economy	National, bilateral
EU and China Partnership on Climate Change	Near Zero Emission Coal (NZEC)	M	Energy, CCS		R&D			Bilateral
Fundacion Chile	Initiatives include: Water and Energy, Responsible Mining, Companies and Society, Non-Conventional Renewable Energy sources, Energy Strategies	M&A	Range of industrial sectors, including: forestry, agriculture, marine resources, environment and chemical metrology		R&D, demonstration, deployment, diffusion	Not-for-profit organization based in Chile, in-country partners include the State of Chile and BHP-Billiton-Minera Escondida Works with an international network	Creation of innovative companies, always with strategic partners (usually private sector). Fundacion usually sells its share in these companies once they are self-sustaining and then reinvests the funds in new initiatives Sale and licensing of technologies (when new technologies become available via its in-house R&D or its collaborations with external, indigenous R&D centres) Supply of technological services across the different key areas that it works in	Bilateral, national, regional

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Stage of tech cycle	Partner or multi-stakeholder participation	Other	Target recipient
							Certification and implementation of standards Broad dissemination through training, seminars, publications and the Internet	
Government of India, Indian car manufacturers	National Hybrid Propulsion Platform (NHPP)	M	Technology adaptation and modification		Research, demonstration	Public-private collaboration	Aim is to create an indigenous demonstration fleet of hybrid cars	National
Government of France	AIRES-Sud (AIRD) Appuis Intégrés pour le Renforcement des Équipes Scientifiques du Sud	M	Solar Energy		R&D	Algeria, Benin, Burkina Faso, Cameroon, Congo, Côte d'Ivoire, Ethiopia, Gabon, Ghana, Mali, Morocco, Niger, Senegal, South Africa, Togo, United Republic of Tanzania	Supports R&D in research centres and universities, promotes the exchange of new knowledge between research entities and stakeholders. Programme is broader than low-carbon/energy but includes renewable energy	International
Government of Mexico, National Council for Science and Technology (CONACYT)	Range of initiatives available at < http://conacyt.gob.mx/ >		Unclear		R&D	Local universities, research centres and private companies, as well as from: Argentina, Belgium, Brazil, Bulgaria, Chile, China Colombia, Cuba, Czechia, France, Germany, Hungary, India, Italy, Japan, Peru, Poland, Republic of Korea, Russian Federation, Spain, United Kingdom, United States of America, Venezuela (Bolivarian Republic of), Viet Nam	Sectoral funds allocate resources for scientific research and technological developing in various sectors	International
National Fund for Scientific and Technological Development (FONDECYT) – Chile	FONDECYT – Chile		RE		R&D, deployment	Local universities, research centres and private companies, as well as from: Argentina, Brazil, Canada, China, Czechia, France, Germany, New Zealand, Poland, Russian Federation, Spain, United Kingdom and United States of America	Funds R&D activities and scientific staff exchange in order to enhance and contribute to the Chilean national projects Funds adaptation of renewable energy technologies	International

Host organization	Initiative or activity	M/A	Sectors	Cross-cutting	Stage of tech cycle	Partner or multi-stakeholder participation	Other	Target recipient
The Waterloo Foundation – UK	Initiatives, include: World Development, Environment		Agriculture, land-use, RE			Governments, NGOs and private companies	United Kingdom based grant-making foundation	International
J-Power Electric Power Development Company – Japan	Electric Power Development Company – Japan			Efficient thermal (incl. biomass)	Deployment	Private and state-owned companies in new markets in Latin America	Collaborative projects to adapt power generation technologies to regional circumstances, for example around efficiency in thermal power generation	International
The Gates Foundation	Agricultural Development, Creating Gender-Responsive Agricultural Development Programs	M	Agriculture	Gender Empowerment		Partners include: WFP, Alliance for a green revolution in Africa, International Food Policy Research Institute, Heifer International, IBRD, African Agricultural Technology Foundation, TechnoServe		International
Wisions.net (Sustainable Energy Project Support, SEPS)	Wisions.net (Sustainable Energy Project Support, (SEPS))	M	RE, EE		R&D, demonstration, deployment	NGOs in developing countries	As a part of its larger portfolio, Wisions funds a few small projects concerning the improvement of renewable energy technologies and energy-efficient appliances	International
Medicines for Malaria Venture	Medicines for Malaria Venture			Anti-malarial drugs	R&D	Public-private partnerships + NGO engagement. Open to any project ideas from any organization – proposals reviewed by Expert Scientific Advisory Committee	Not-for-profit entity aimed at discovering and developing affordable anti-malarial drugs	International
ITER (International Fusion Energy Organization)	ITER Fusion Reactor		RD&D	Fusion reactor		Currently there are seven Parties participating in the ITER programme: China, EU, India, Japan, Japan, Russian Federation, Republic of Korea and United States of America	An international fusion experiment designed to show the scientific and technological feasibility of a full-scale fusion power reactor	International

Abbreviations: A = adaptation, CCS = carbon dioxide capture and storage, CGIAR = Consultative Group on International Agricultural Research, EU = European Union, IBRD = International Bank for Reconstruction and Development, M = mitigation, NGO = non-governmental organization, PPP = public-private partnership, PV = photovoltaic, R&D = research and development, RD&D = research, development and demonstration, RE = renewable energy, RETs = renewable energy technologies, WFP = World Food Programme.