Framework Convention on Climate Change

KCI/2022/6/5

18 May 2022

Katowice Committee of Experts on the Impacts of the implementation of response measures
Sixth meeting

Bonn, Germany, 2-3 June 2022

Background note on compilation of concrete examples

I. Background

1. The Conference of the Parties (COP) at its twenty-fifth session, the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (CMP) at its fifteenth session, and the Conference of the Parties serving as the meeting of the Parties to the Paris Agreement (CMA) at its second session agreed on workplan of the forum on impacts of the implementation of response measure (the forum) and its Katowice Committee on the Impacts of the Implementation of Response Measures (KCI).

2. As per activity 2 of the workplan for forum and its KCI1, the KCI is to compile the concrete examples of country-driven strategies and best practices on just transition of the workforce and creation of decent work and quality jobs and on economic diversification and transformation. The examples are to focus on challenges and opportunities from the implementation of low greenhouse gas emission policies and strategies towards the achievement of sustainable development.

3. At KCI 4, the KCI considered a background note prepared by the co-chairs and agreed elements of examples and an outline for the compilation. Further, KCI 4 agreed to launch a call for input from Parties and observers in line with the agreed elements.

4. The secretariat worked intersessionally and prepared a draft compilation of concrete examples, under the guidance of task lead of working group and with the support of a consultant.

II. Scope of note

5. This background note provides in its annex draft compilation of concrete examples prepared by the KCI task lead of working group.

III. Expected action by the Katowice Committee on Impacts

6. The KCI will be invited to provide comments and guidance on the draft compilation of concrete examples for its finalisation.

[1] Decision 4/CP.25, Decision 4/ CMP.15, Decision 4/CMA.2

Annex

Compilation of concrete examples on country-driven strategies and best practices on just transition of the work force and creation of decent work and quality jobs and on economic diversification and transformation

focusing on challenges and opportunities faced by the implementation of low greenhouse gas emission policies and strategies towards the achievement of sustainable development

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Annexures

1 Introduction and mapping of concrete examples

Just Transition, and economic diversification and transformation are increasingly becoming fundamental to achieve the plans to deliver the transition to a low-carbon economy.

The objective of this compilation is to understand what lessons can be learnt to have effective just transition and economic diversification from the countries' experience of implementing variety of low greenhouse gas emission policies and strategies towards the achievement of sustainable development.

The compilation is solely based on concrete examples and relevant information which were submitted by Parties and observers, in response to call of inputs issued by the Katowice Committee of Impacts of the implementation of response measures (KCI). The compilation is done in the following steps:

(1) KCI made a call for input from experts, practitioners and relevant organizations to submit concrete examples
(2) A long list of 41 concrete examples was created, which were received from 21 stakeholders as response to call for input.
(3) Classification of concrete examples in to categories: Just transition, and economic diversification and transformation
(4) Analysis of concrete examples based on scope (sector, Policy/program/project, geographical scope), type of challenge; Just transition aspect (gender/skill development)

Table 1 and Table 2 provide an overview of key characteristics of these examples for Just transition and economic diversification and transformation. The policies covered various facets of just transition and economic diversification and transformation of both market and non-market-based policy in various sectors such energy, agriculture, forestry and land use, transport, and industry sectors targeting specific groups e.g., gender indigenous women, people from small islands.

Table 1: Overview of key characteristics of examples of just transition

No	Type	Sector	Geographical scope	Aim of the project/policy	Just transition aspect
1	Project	Agriculture	Nigeria	Understand potential of just transition to agroecology, more sustainable methods of land use and production, as well as better and more skilled jobs	Monitoring working conditions, developing policy measures to promote agroecology at national or regional level
2	Policy	Agriculture	Agrarian countries	Transition from industrial agriculture to agroecology and agroforestry	Policies for just transition of workers
3	Program	Energy efficiency in building	France, 18 countries in Mediterranean, Africa, South-east Asia, South America, Eastern Europe	Developing-implementing technical assistance and capacity reinforcement program to support adaptation and mitigation through energy efficient building renovations.	Project management assistance for implementation; support for verifications/certifications, provide capacity reinforcement to stakeholders.
4	Program	Energy efficiency in building	France	Developing simplified broader inclusive plan to accelerate energy-efficient building renovations for reducing energy consumption and GHG emissions.	Providing investment facilities, technical implementation assistance, stakeholder training capacity building
5	Project	Multi sectors	Ghana, Columbia, Indonesia, Bangladesh, Vietnam, Laos, Argentina, Kenya, Malawi	Inclusion of Just transition in NDCs, LT-LEDs, climate strategies	The concept of just transition is explored and developed to different stages in each of the country
6	Policy	Multi sectors	Philippines	Developing-implementing green jobs content accounting mechanisms for incentivizing green business enterprise.	Mechanism for selecting green enterprise. Incentives on taxable income, expenses on skill development, capital expenditure for green enterprise.
7	Policy	Energy	Philippines	Increase private sector investment in renewable energy	Role of trade unions in the advancement towards a lower carbon society

No	Type	Sector	Geographical scope	Aim of the project/policy	Just transition aspect
8	Program	Energy	Ireland	Transition from coal to renewable energy generation	Supporting workers, companies and communities affected by transitioning
9	Program	Energy	Indonesia	Increase renewable energy generation	Ways to manage the experts' career development in power sector
10	Program	Energy	India	Provide technical assistance to accelerate the development of the solar capacity specifically for capacity building programs, and concessional project finance to develop solar parks, energy transmission infrastructure, and facilitating rooftop solar power projects	Integrated approach for social and economic development of the communities/ stakeholders within the area of operation
11	Policy	Energy	Columbia	Ensure just transition for workers in oil and gas sector	Planning for a just transition for coal and oil workers
12	Policy	Energy	Spain	Manage closure of coal mines	Development of a Just Transition Strategy by Government
13	Policy	Energy	New Zealand	Manage prohibition of offshore oil and gas exploration permits issuance	Development of transition plan for affected regions
14	Policy	Energy	New Zealand	Manage prohibition of offshore oil and gas exploration permits issuance	Inclusive planning process. Securing support for worker's skill development, empowerment, job clustering during transition
15	Project	Energy	Morocco	Installation and dissemination of solar technologies using a cooperative approach	Capacity building and local empowerment
16	Project	Energy	Marshal Islands	Assemble, install, operate and maintain solar-powered lights, refrigerators and freezers	Training young women technicians on different Islands to secure decent work conditions.
17	Program	Energy	South Africa, developing countries	Promotion of cross-sectoral dialogues to develop informed energy policies and plans. Provision of concessional financing to RE projects.	Stakeholder consultations, capacity building for policy modelling - planning, providing concessional finance.

No	Type	Sector	Geographical scope	Aim of the project/policy	Just transition aspect
18	Policy	Energy	USA	Coordinating, empowering, and identifying economic and human resource development programs to assist diversify economy; create job in new or existing industries. Building carbon-based incentives and business development projects support.	Coordinating, collaborating, creating jobs, business development support, attracting finance
19	Policy	Energy	South Africa	Develop a plan for coal plant closure, and the unbundling and privatization of Eskom	Challenges of managing closure of coal mines
20	Project	Forestry	Cameroon	Develop social entrepreneurship focused on tree nursery, bee-keeping and transformed by-product	Role of grassroots women, including indigenous and ethnic women as workers and entrepreneurs
21	Project	Manufacturing	Sweden	Evolving and promoting fossil-fuel-free steel manufacturing without use of coking coal; thereby transforming an emission intense industry to a low-CO2-emission or CO2- emission-free production.	Joint initiative-collaboration. Streamlining permit process. Regional collaboration
22	Policy	Mining	Spain	Developing-implementing just transition agreements and large-scale integrated strategies to offset negative impacts and finance green projects.	Just transition agreements to offset negative impacts. Financing green projects.
23	Project	Manufacturing	Bangladesh	Shift away from fast fashion towards more circular business models.	Just transition of workers throughout the supply chain
24	Project	Waste management/ Waste Recycling	Columbia	Ensure decent work in waste recycling sector	Women empowerment, training of community leaders and developing neighbourhood committees
25	Project	Waste management/ Waste Recycling	India	Manage municipal solid waste including incineration	Managing the livelihoods of waste pickers

No	Type	Sector	Geographical scope	Aim of the project/policy	Just transition aspect
26	Program	Mining	Mineral producing countries	Establish principle for just transition in extractives.	Stringent mandatory social requirements for responsible sourcing of minerals used for production of renewable energy equipment.

Table 2: Overview of key characteristics of examples of economic diversification and transformation

No	Type	Sector	Geographical scope	Aim of the project/policy	Economic diversification aspect
1	Project	Agriculture	Zambia	Reduce vulnerability of rural women farmers to negative impacts of droughts and floods	New economic activities for women by promoting sustainable agriculture practices, adoption of solar home systems and tree planting
2	Project	Agriculture	Indonesia	Adaptation project to tackle the threats of landslides, droughts and groundwater scarcity caused by massive deforestation	New economic activity for women by adopting aquaponics models
3	Policy	Multi sectors	Rwanda and surrounding countries	Development with a key focus on sustainable economic growth and social development	Export diversification, increasing productivity, technological capability, and international competitiveness. Rural development and creating 'soft infrastructure' of good governance and institutional arrangements.
4	Policy	Multi sectors	South Korea, ASEAN countries	To build forward-looking partnership with ASEAN directing focus on sustainable development, peace and security.	Partnership building, regional cooperation
5	Program	Multi sectors	France	Develop local projects, that diversify local economy, for sustainability and environmentally responsible development	Partnership program between the State and local communities to help develop local projects, that diversify local economy
6	Program	Multi sectors	Sweden	Reduce GHG emissions.	Supporting-strengthening regional-local initiatives, cost effective GHG reduction measures, diversified and transformed the implementing regions

No	Type	Sector	Geographical scope	Aim of the project/policy	Economic diversification aspect
7	Program	Multi sectors	Australia, China, Israel, Brazil, India, Canada, Japan, Korea, Taiwan, UK, USA, Taiwan, etc.	Expedite processing of green tech patent applications to address climate change	to support a just and equitable distribution of economic opportunities for SMEs and to compete with larger companies and organizations, as patents foster growth and commercial opportunities
8	Policy	Energy	Indonesia	Green transformation program by increasing RE capacity and retiring diesel power plants	Promoting renewable energy, competitive power procurement,
9	Program	Energy	UK	Implementation of smart energy meters	Skills development to turn meter readers into smart meter installers.
10	Project	Energy	Antigua and Barbuda	Promoting grid interactive solar photovoltaic for Schools and Clinics to provide access and uninterrupted power during disasters.	New economic activity for men and women to develop entrepreneurship skills to enter private practice
11	Program	Energy	India	enhanced implementation of solar technologies	Transformation of power sector infrastructure by making it competitive with fossil-fuel power generation
12	Project	Management of stranded assets	Denmark	Transforming port into leading hub for off-shore wind, after political decision to end oil and gas production.	industry transformation from fossil to wind energy
13	Project	Managing stranded assets	Denmark	Transferring shipyards to green industrial parks for wind and renewable energy after announcing its closure.	Establishing Lindø Offshore Renewables Centre (LORC) through public private partnership for smooth transformation from shipyard to industrial park.
14	Project	Manufacturing	Sweden	To build the greenest battery in world with minimal carbon footprint and highest ambitions for recycling to enable transition to renewable energy.	putting in place regulatory framework and infrastructure for green energy transition, sustainable manufacturing
15	Project	Transport	Antigua and Barbuda	Promoting electric mobility	Engaging car dealerships to supply EVs throughout country

2 Concrete examples of country-driven strategies and best practices on just transition of the work force and creation of decent work and quality jobs

The concrete examples received as submission against call for inputs are compiled in Annexure 1.

3 Concrete examples of country-driven strategies and best practices on economic diversification and transformation

The concrete examples received as submission against call for inputs are compiled in Annexure 2.

4 Synthesis of country-driven strategies and best practices

4.1 Just transition of work force and creation of decent work and quality jobs

Most of the low-emission strategies or policies in the concrete examples included NDC mitigation target, present situation of respective sector or importance of the project with respect to the NDC mitigation target. The present situation of the respective sector was further linked to emphasize the need of just transition and characteristics of the just transition initiative.

The sectors or areas that are covered by the concrete examples and the distribution of concrete examples as per type are shown in figure 1.

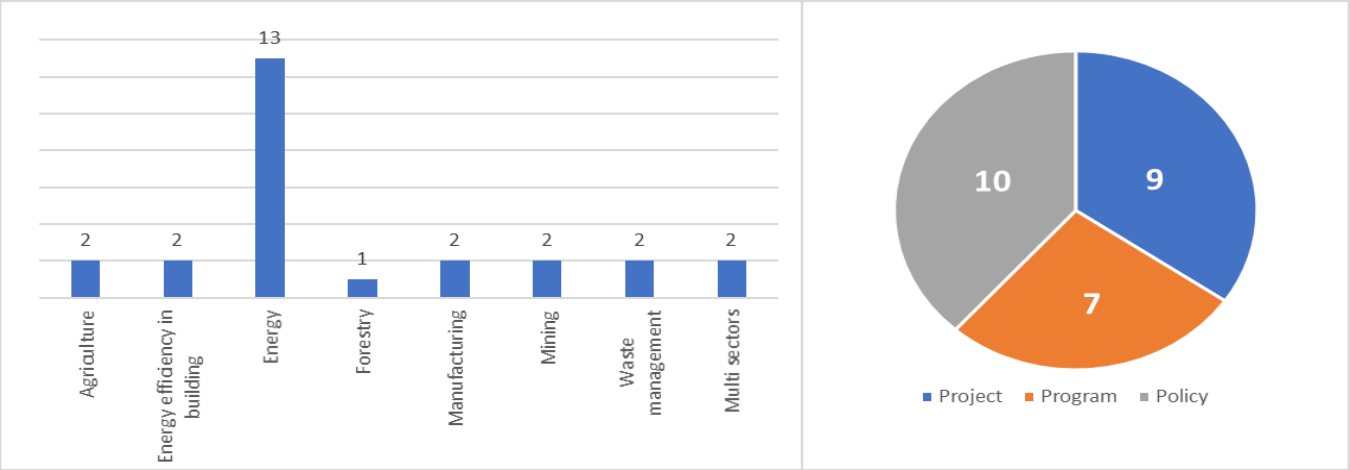

Figure 1 Distribution of just transition concrete examples as per sector/area and type

4.1.1 Policies and their characteristics

Agriculture

As per case studies, the agriculture sector is considered highly vulnerable to impacts of climate change and there is a need to move away from energy intensive and industrialized approaches. The policies in the agriculture sector aimed to transform the sector from industrialized agriculture to small farmer-based agroecology and agroforestry for climate resilient farming and reducing GHG emissions due to reduced chemicals input for food production. These examples considered agroecology organic farming as sustainable method for land use and production as well as for generation of better and more skilled jobs (Action Aid-1, ITUC-5).

Energy efficiency in building

In this construction sector, the concrete example is associated with energy efficiency improvement. A project aimed to transform the construction sector towards an enabling environment for improving buildings' energy efficiency and resilience. The PEEB Cool programme supports low-carbon development strategies in the 18 participating countries that have hot and Mediterranean climates (EU-1).

Energy

The concrete examples which aimed to increase the renewable energy generation in the country shows how trade unions can support just transition of workers when the government is planning to increase private sector investment in renewable energy sector in Philippines and how the career development of experts in power sector can be managed while government is planning to increase renewable energy generation in Indonesia. The concrete examples also show that increased installations of solar technologies generated new employment opportunities for local people.

Key considerations from the concrete examples are:

- Involvement of trade unions in social dialogue helps collective bargaining with affected communities to have smoother just transition (ITUC-3).
- Inclusion of new key competencies in expertise management strategy helps to overcome technical challenges of renewable energy. This included smart grid, energy storage, climate and environment and expert career path (Indonesia-1).
- Energy cooperatives play an important role in supporting national governments to increase public acceptance of the energy transition, enhancing energy security and providing opportunities for local economic growth (CIF India-2, WECF-1).
- The initiatives of training women technicians to assemble, install, operate and maintain solar-powered equipment (lights, refrigerators and freezers) helps securing decent work conditions on small islands (WECF-3).

Mining

The concrete examples related to managing closure of coal mine included ways to support workers, companies and communities affecting by transition; elaborated challenges of managing closure of coal mines and shared experience of developing a just transition strategy by government containing important element to manage closure of coal mines.
Another example puts forward principles for just transition in extractives. With more renewable equipment produced, there is a need to mine more minerals. In order to can ensure responsible sourcing of minerals, these principles for just transition are established.

Key considerations from the concrete examples are:

- Establishment of a dedicated institute for just transition for technical, financial and legal assistance (ITUC-8)
- Development of just transition strategy including new instruments for transition agreement that is fair for affected communities or territories (ITUC-8)
- Establishment of national just transition fund for supporting innovative and employment generation projects to facilitate smooth just transition (EU-6)
- To plan and execute a multi-year research policy program in order to explore options of incorporating just transition strategies into climate policies with the objective to provide evidence and insights to support the introduction of just transition strategies and policies (Climate Strategy-1).

Forestry

The project in forestry sector of Cameroon aimed to develop social entrepreneurship by involving people in tree nursery, beekeeping and transformed by-products. This project demonstrates role of grassroots women, including indigenous and ethnic women as workers and entrepreneurs (WECF-4).

Waste management

The concrete examples in waste management sector showcase example of addressing issues related to managing livelihoods of waste pickers, women empowerment, training of community leaders and developing neighborhood committees.
Training on natural resource management, gender inequalities, local public policies, and citizen's initiatives has led the beneficiaries to be empowered, exercise their democratic rights, protect their environment and cultural heritage; thereby paving the way for a sustainable and gender-responsive city through economic empowerment of women recyclers and guarantees for decent work (WECF-2, ITUC-7).

Manufacturing

One concrete example is about shift away from fast fashion towards more circular business models in Bangladesh. The example demonstrates that workers in this sector are severely vulnerable to resource efficiency initiatives and environmental impacts like COVID 19. The role of trade unions is critical in negotiating social protection for workers in this industry. Companies must ensure that workers are paid living wage and have access to social protection. *(#15d-ITUC)*
Another concrete example relates to the joint green industry transformation initiative 'HYBRIT' for fossil-fuel free steel production aims to reduce the steel industry's carbon dioxide emissions by replacing coking coal with hydrogen produced via electrolysis using renewable electricity and water. A process called direct reduction is intended to replace the blast furnace process that is used today (EU-3).

Multi sectors

One concrete example relates to region's shift from economy that is based oil and gas to economy that is based on clean energy and low emissions. The example shows an appointment of a just transmission commissioner/unit with a role to manage trade and broker relation in affected regions for encouraging transformation towards just, equitable and inclusive green economy and building relationships with affected communities (Water Foundation-2, EU-6).Another concrete example is Ecological Transition Contract/Partnership, a partnership program between the State and local communities to help develop local projects, that diversify local economy, for sustainability and environmentally responsible development.

4.1.2 Impacts of identified strategy on just transition of workforce and creation of decent work and quality jobs

While some policies in the concrete examples are still at initial stages of planning or implementation and there is limited information available on impacts of policy implementation (ITUC-5), some of the impacts which were mentioned in the concrete examples are:

- Training, development and skill enhancement project and incorporation of such initiatives into national climate action plans and electricity roadmaps is expected to contribute to raise climate ambitions, guaranteeing inclusive, just and long-lasting energy policies with at least 20% women among trained technicians by 2030 (WECF-3)
- The multi-year research policy program in Indonesia resulted in successful inclusion of just transition in revised NDC and their Long-Term Strategy for Low Carbon and Climate Resilience (Climate Strategy-1)
- Approximately 44 diverse projects in Midland region of Ireland cover a range of opportunities which includes new enterprise hubs, support to local business development, research and exploratory studies, tourism and heritage projects, and opportunities for reskilling (EU-6).
- Social protection supported a large number of workers in small-medium enterprise supply chain (ITUC-4).
- A gender-just transition in agriculture provides an opportunity to advance women's rights in agriculture, and that opportunity should be seized (Action-Aid-1).
- Low-income communities benefited from programs like CEIP which provides incentives for provinces to reward early investment in wind and solar power schemes (Water Foundation-3).
- Energy efficiency in buildings and construction, through programs like PEEB Cool, can contribute to supporting local employment along with green recovery and passive construction approaches based on traditional constructive methods and usage local and low carbon materials. Such programs impact many in terms of thermal comfort, energy cost savings and improved community services over 18 countries and over 113.8 million (both numbers include 50% females) number of indirect beneficiaries and creating over 25,000 future-proof local jobs (direct and indirect), primarily within the construction sector (EU-1).
- Not only do energy-efficient building renovations support programs such as France's 'My Innovation Allowance' support the construction industry, but they also help create local quality jobs and low-income families by reducing heating bills and improving the quality of their home (EU-2).
- The France's Ecological Transition Contract/Partnership promotes local development, in 107 territories, of various sectors such as renewable energies, energy efficiencies, mobility, agriculture, urban planning, circular economies (EU-7).
- Green industry transformation initiative such as Sweden's 'Hybrit' provides opportunity to decrease emissions and develop sustainable practices for the future of steel and building materials, as well as transforming jobs in an emission-intense industry. A pilot plant in Gällivare, Sweden is expected to generate 1500 jobs, complemented by new production methods for iron ore generating 2000 jobs. The initiative is also expected to contribute to enhanced regional cooperation (EU-3).

4.1.3 Challenges, opportunities and stakeholder involvement

There are a variety of challenges which were mentioned in concrete examples. Many of them related to implementation of projects or policy instead of highlighting the challenges faced to integrate or implement a just transition policy. A few of the challenges mentioned are:

- Patriarchal norms, gender stereotypes and monopolistic male-dominated industry as well as lack of organizational support hinders the women empowerment in just transition in rural areas.
- Landlessness, insecure access and control over land, and lack of recognition of communal land tenure present major barriers to social justice (Action Aid-1).
- Stakeholder engagement was observed as one of the major challenges, especially in developing countries, due to different priorities and lack of interlinkages and coordination among relevant actors. (Climate Strategy-1, Water Foundation-2).
- Lack of expertise and new competencies, specifically in developing countries, which are crucial to build institutional capacity and arrangement. There is a need to set-up research centers and collaborate with stakeholders (Indonesia-1).
- Intermittency characteristics of variable renewable energy (VRE) such as solar PV and wind power limit penetration of clean renewable energy in developing countries and require improvement in both technical and human capital capacities as well as management of workforce (Indonesia-1).

Accordingly, the example related to the use of solar technologies has direct impact on women's education, health and empowerment and also helps in reducing workload of firewood collection (WECF-1,3,4). The use of energy efficiency technologies in the construction sector has direct and indirect impact on millions of people, their jobs and lifestyle. The concrete examples show that there is a huge opportunity for cooperative structures to encourage strong commitment and reduce mistrust in authorities and the national office in order to support activities in just transition in developing countries. The shift from industrial agriculture to agroecology provides opportunity to smaller farmers to retain more income, grow local rural economy and also helps government relocate budget from subsidies on chemical fertilizers to provide support on adaptation, training, extension services (WECF-1).

4.1.4 Lessons learned

Integration and implementation of policies

- There is no 'one size fits all' approach to just transitions. The strategy must be tailored to and defined by each individual country (Climate Strategy-1, Water Foundation-2). It is important that just transition does not exacerbate inequalities and must be undertaken in a way that supports affected workers (Action Aid-1, ITUC-3). Rushed approaches due to pressure on policy planning process or due to reason of 'climate emergency' have high risk of backfiring and causing more harm than benefits (Action Aid-1).
- Just transition enabling policies need to be integrated into national climate policies-proposals, as well as in NDCs and NAPs and GCF proposals. This includes supporting regulatory framework and plan for effective implementation on ground (Action Aid-1). Social protection and the creation of decent work are important building blocks of just transition to build societal resilience (ITUC-4,6).
- Understanding the importance of establishing and maintaining relationships with relevant stakeholders to enable ownership of just transition in a specific national context is key for effective implementation of and achievement of just transition (Climate Strategy-1, Water Foundation-2, ITUC-3).
- Ensuring inclusiveness and participation rights, including during conceptualization and planning process, is essential for effective implementation of just transition policies and for achieving desired results (Action Aid-1, Water Foundation-2, ITUC-3 & 5).
- Trade unions with adequate expertise and support can play a role in advancement towards lower carbon society. Involvement of respective associations, trade unions can help deliver just transition in smooth and effective manner (Water Foundation-2, ITUC 2,3,5).
- Technical as well as financial assistance is crucial for developing countries to overcome the barriers to enhancing renewable energy share in power sector to achieve desired targets of GHG mitigation and be on track with carbon neutrality plan (Indonesia-1).
- A peer-to-peer learning and exchanges on just transition could be valuable for state-owned energy companies, including their trade unions, as they are at different stage of shifting from fossil fuels to renewables (ITUC-6).

Skills development

- The focus on skills development within just transition discussions and initiatives is often limited to reskilling coal miners to help them find alternative employment. However, just transitions, more broadly, are going to require significant decarbonization across the entire economy, and this, in turn, will open up a wide range of new employment and livelihood opportunities; development of rooftop solar energy for example, is not only a technical and financial process, but also a social and institutional learning and capacity development process. Thus, a key component of just transitions will be to anticipate new skills requirements across entire sectors and put in place the institutions and curricula needed to support the development of existing and emerging skills needs (CIF India-2).

Women empowerment

- With the core principles of democracy, equality, equity and solidarity, energy cooperatives play an important role in supporting national governments to socially sound transformation; contributing to public acceptance of the energy transition, enhances energy security and provides opportunities for local economic growth. It also helps in reducing mistrust in authorities who are supporting the activities. Since cooperative is a form of business ownership run by and for their members, it allows increased control over energy generation, keeping investments local, sending a political key message for a sustainable, just and democratic way of business. Gender-just energy cooperatives are a way to guarantee women and men an equal voice in the development of renewable energy production. With newly acquired skills, women working in productive cooperatives are empowered through the control over the entire value chain (WECF-1).
- The Training-of-Trainers (ToT) concept, whereby women are taking on leadership roles, increases their understanding and control over production and income generation alternatives; bringing in a positive change in gender roles enabling

women to lead the replication of the solidarity economy model, gaining more recognition within their communities. The use of local experts in ToT also helps enhance continuous learning and sustainability of model (WECF-2,3,4).

- Grassroots women, including indigenous and ethnic women, play an important role as workers and entrepreneurs, particularly in rural economy. Social entrepreneurship promotes strong cooperation and knowledge sharing between local communities and public authorities, research institutes and foundations, ensures continuous learning for sustainable forest and biodiversity protection. Through awareness raising, capacity building, moral and financial support, women contribute to building peaceful livelihoods for their families and their communities (WECF-4).
- A key strategy for enabling transitions to sustainable land management approaches is to improve land tenure and access, particularly for women (Action Aid-1).

Sector specific

- Clear state- and national-level policies are needed to address the interests and concerns of landowners, investors, developers, and other stakeholders who will be affected by various land lease models for large scale promotion of renewable for example through solar parks. Although landowners were recognized and compensated, various studies suggest that from an economic and social perspective, getting annual land rentals is preferable over an upfront payment of compensation as regular source of income CIF India 1&2).
- The key lesson from concrete example of waste pickers in India for securing just transition is that although trade unions can secure just transition measures via collective bargaining or other forms of social dialogue, these victories are often partial and not necessarily permanent. Therefore, safeguarding a just transition measure may require political and legislative action. Moreover, efforts to formalize informal work should be included when working within a Just Transition Framework for this sector (ITUC-7).
- The Sweden's 'Hybrit', a collaborative project aiming for fossil fuel free steel production, shows that a 1000-year-old production method of industry can be transformed to face the challenges that climate change poses (EU-3).
- When shifting away from fossil fuels towards renewable energy, the transformation of energy systems must also ensure responsible minerals extraction, and must not simply shift exploitation and land grabs to new areas.

4.2 Economic diversification and transformation

Most of the concrete examples dealing various aspects of economic diversification and transformation included promoting conducive environment in the form of policies, incentives and soft infrastructures needed for economic diversification, promoting new low carbon, cleaner and efficient technologies and process, encouraging collaborative initiatives and accelerating processes (including registration, certification, patent processing), for green technologies as per present situation of respective sector or importance with respect to the NDC mitigation target.

The concrete examples provide multiple paths for economic diversification. For countries at very low levels of economic development, the priority is to get the fundamentals right. As countries develop, multiple diversification paths become available.

The sectors that are covered by the concrete examples and the distribution of concrete examples as per type are shown in figure 2.

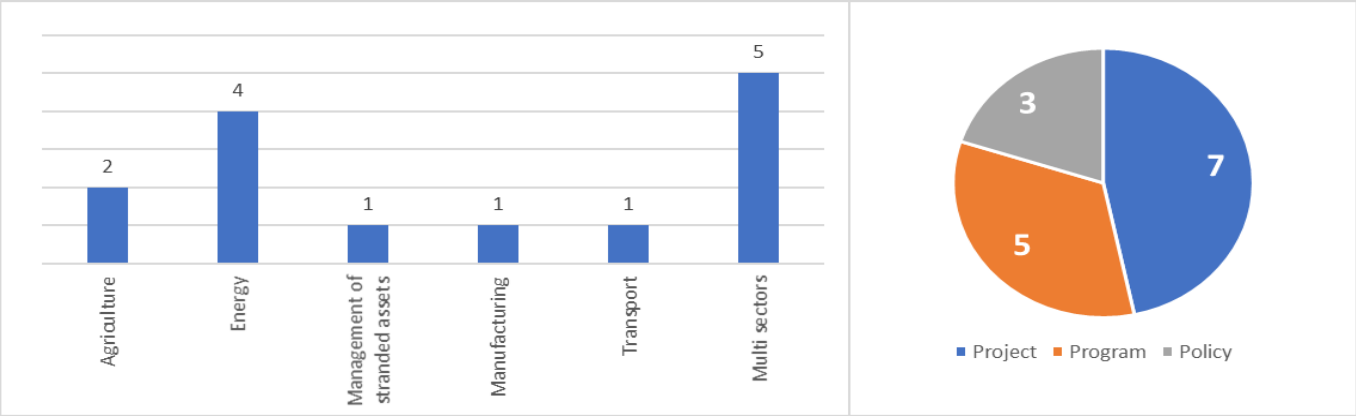

Figure 2 Distribution of just economic diversification examples as per sector/area and type

4.2.1 Policies and their characteristics

Agriculture

Both the economic diversification examples in agriculture sector were projects which aimed to adapt to vulnerability caused by climate change like droughts, floods, landslide, ground water scarcity and resulted in new source of income for community specifically women by, for examples, promoting sustainable agriculture practices, adoption of solar home systems and tree planting, adopting aquaponics models .

Energy

There were variety of programs and projects in the energy sector. These include programs to increase renewable energy capacity, retiring diesel power plants, accelerate implementation of solar technologies by financing schemes, installation of smart energy meters.

Manufacturing

Under manufacturing sector, the example presents the implementations of a program to build world's greenest battery with minimal carbon footprint and highest ambitions for recycling to enable transition to renewable energy. This project is implemented by putting in place regulatory framework and infrastructure for green energy transition and sustainable manufacturing.

Management of stranded assets

There were two interesting examples which demonstrated how the existing infrastructure can be used while the industries are shifting from fossil fuel-based energy production to renewable energy production. One case study showed how a port was transformed into leading hub for offshore wind after political decision to end oil and gas production. While another example showed how shipyard was transformed to green industrial parks for wind and renewable energy after announcing its closure.

Transport

The concrete example in transport sector is about promoting electric vehicles in a small island and how the government engaged car dealerships since development with a goal to use existing dealerships to supply electric vehicles throughout country and create business opportunities for West Indies Oil Company, supermarkets, plazas, bars, workplaces for charging stations.

Multi sectors

There are concrete examples which implemented policies that targeted multiple sectors, mainly to develop local projects that diversify local economy for sustainability and environmentally responsible development while reducing GHG emissions. One of the examples aimed to provide just and equitable distribution of economic opportunities to SMEs while dealing with climate change and implemented a policy to expedite processing of green technology patent applications.

4.2.2 Identified impacts of economic diversification and transformation

The impacts of implementation of some of the policies, programs and projects on economic diversification are:

- Implementation of economic diversification of strategy in agriculture sector not only assisted in creating a conducive environment to business but also helped expanding the economy to the point where it is closer to the full reliance on agriculture so far that it is developing services and growing sectors.
- Export markets on the other hand, add another dimension of export diversification with Special Economic Zones (SEZs) potential to jointly and cost effectively address the critical identified constraints; providing access to industrial land, which would otherwise be costly and time-intensive to acquire and help assist in product generation. The Economic Development and Poverty Reduction strategy emphasizes importance of building multidisciplinary production and export corridor that will include service development, which will begin to transform Rwanda from a subsistence economy to a modern economy (Water Foundation-4).
- Programs focused on "Three Ps" of people, Prosperity, and Peace helps in extending political relations from business to technological, cultural, and humanitarian cooperation (Water Foundation-5).
- The programs such "Climate Leap" that support regional and local initiatives to reduce GHG emissions have contributed to diversifying and transforming the implementing regions. These includes by installation of charging stations for electric cars, biogas plants, and railway maintenance and energy efficiency projects (EU-8).
- The transformed Danish ports have a substantial service and hospitality sector, in addition to one of the most advance local supply chains for offshore wind. This has also led to a circular economy.

- Lindø industry park/Odense Port is an example of successful transformation from an international shipyard to thriving hub in the energy, offshore wind and maritime sectors. The project objective is to promote innovation in the offshore renewable energy sector contributing to lowering the Levelized Cost of Energy and making offshore renewable energy viable (EU-5).
- The manufacturing of green batteries in Denmark's Northvolt factory plans to deliver batteries with an 80% lower carbon footprint compared to those made using coal energy. The batteries will be used in different vehicles and in applications to store energy. The rapid development of new industries reshapes the pattern of energy usage. There will therefore need to be a regulatory framework and infrastructure in place, as well as engagement from relevant actors to enable this development (EU-4).

4.2.3 Challenges, opportunities and stakeholder involvement

Despite achievements of continued growth, poverty remains widespread in developing countries and factors like high population density, rural ecosystem and low level of land availability creates hinderances for economic diversification (Water Foundation-4).

One of the challenges faced is that pursuing perfection and inclusiveness makes it difficult to prioritize or decide on trade between cooperatives. Lack of clear priorities or framework leads to a lack of strategic planning and implementation; posing risk of re-implementation of existing programs.

Assessing the implications of policy may require an assessment of two factors (i) whether the outcome would not have happened in the absence of the policy and (ii) more important factor is whether outcome could not have been achieved without government (Water Foundation-5).

4.2.4 Lessons learnt

- Transformative change needs close cooperation between private and public actors.
- There is a need to develop applications for better spreading of technologies and innovation and avoiding other market failures, spill-over effects to increase gains and authorization frameworks to increase additionality (EU-8).
- Developing countries needs both technical and financial support from international multi-stakeholders to address the three pillars of the energy trilemma: affordability, security, and environmental sustainability (Indonesia-2)

5 Conclusions and recommendations

This compilation of concrete examples presented a range of policies, programs and projects which were implemented with an aim to reduce greenhouse gas emissions or managing the impacts of climate change. Most of the policies are mitigation policies in energy sector and adaptation policies in agriculture sector.

The compilation also summaries the challenges which are been faced in implementation of these policies ranging from stakeholder engagement, prioritizing policies, technical and financial capacity, etc.

In the compiled case studies, many a times the concrete examples for both strategies i.e. just transition, and economic diversification and transformation, resulted in new economic activities for specific communities or women empowerment.

Based on this compilation following recommendations can be made:

Recommendation 1: Prepare compilation of selected examples with detailed analysis of lessons learnt.

This compilation contains 41 concrete examples. However, critical aspects of the example related to just transition and economic diversification and transformation is not covered adequately in a detailed manner.

Recommendation 2: Consider examples of government led policies which were specifically designed for just transition and economic diversification and transformation.

While a wide variety of examples speak to just transition and economic diversification transformation, it is observed that there are very limited examples which showed economy wide integration or implementation of policy. The highest level of policy implementation was observed for implementation of policies for solar technologies.

Recommendation 3: Invest in early planning of just transition policies which are inclusive and based on stakeholder engagement

Recommendation 4: For countries at very low levels of economic development, the priority should be to get the fundamentals right. As countries develop, multiple diversification paths become available.

Recommendation 5: National circumstances of each country is different and peer to peer learning facilitates planning and implementation of effective policies.

6 References

Documents received as formal submissions from various experts, practitioners and relevant organizations, available on Secretariat website under KCI; against call inputs to submit concrete examples on impacts of the implementation of response measures on (a) just transition of the work force and creation of decent work and quality jobs, and (b) on economic diversification and transformation; focusing on challenges and opportunities from the implementation of low greenhouse gas emission policies and strategies towards the achievement of sustainable development.

7 Acknowledgement

The KCI extend their appreciation to the observer organizations and Parties for the inputs they provided for preparation of this document.

Annexure 1: Concrete examples of Just Transition of workforce and creation of decent work and quality jobs

1 Just Transition in agriculture

Source/ Reference: Just transition in Agriculture (Action Aid-1)

Key characteristics:

Agriculture is a significant source of the world's greenhouse gases, and is highly vulnerable to its impacts. The IPCC Special Report on Climate Change and Land (August 2018) confirms that to become fit for purpose in an era of climate change, agriculture must move away from intensive and industrialized approaches towards food systems based on agroecology. However, efforts to dramatically cut GHGs in the agriculture sector could also bring major disruptions to peoples' lives viz. farmers using industrial agriculture techniques may feel demonized and also top-down simplistic climate policies may leave large sections of rural communities stranded, with few options for secure livelihoods.

Description of low-GHG-emission strategies or policies

Shift from industrial agriculture to agroecology and agroforestry to become more resilient to climate impacts and reduce GHG emissions from food production. Reduce energy used in transport and heating greenhouses; strengthen local, seasonal food and markets. Secure land rights for smallholder farmers, particularly women, so that they can make the investments needed to transition to agroecology. Gender-responsive extension services to train farmers in agroecology and support a Just Transition in Agriculture. Counter power of corporate agriculture and the concentration of land and wealth, so that smallholder farmers and local food systems can thrive.

Impact of identified strategy or policy

Shifting from industrial agriculture to agroecology and agroforestry provides multiple benefits to agriculture and farmers:

Adaptation:

- Healthier soils packed with soil organic matter are spongy, retain water, and are slow to dry out, thereby improving water availability to crops for longer, extending growing times and increasing yield even in times of reduced rainfall and higher temperatures. Moreover, improved soils and more trees significantly reduce the risk and impact of local flooding in times of heavy rainfall. Increased crop and seed diversity spreads risk, reducing chances of total crop failure following drought, flood, pests or disease.

Mitigation:

- Significantly reduces fossil fuel CO2 by avoiding production of synthetic nitrogen fertilizers. Avoids degrading soil carbon to atmospheric CO2 through the application of synthetic nitrogen fertilizers and soils act as carbon sinks. Trees and multiple crop layers in agroforestry act as additional carbon sink.
- Avoids biodiversity loss, including deforestation pressure caused by aggressive expansion of plantations incentivized by industrial and mechanized agriculture e.g. soya in Latin America and palm oil in South East Asia.

Economic benefits:

- Farmers can retain their hard-earned income by not purchasing agribusiness inputs, and are less squeezed by the corporate sector. Benefits smallholders, especially smallholder women farmers who may not have access to finance or deep pockets. Provides a counter to the concentration of land and wealth facilitated by corporate agribusiness, in which millions of smallholder farmers are forced out of farming by tight margins or aggressive land expansions.
- More smallholder farmers retained around a community strengthens local economies and services. Re-allocating government budgets currently spent on subsidizing synthetic fertilizers can free up millions to provide support for adaptation, training, extension services based on agroecological approaches.
- Improved local water, biodiversity and environment, including from reduced fertilizer runoff. Health benefits for farmers, local communities and consumers through avoidance of pesticides and fertilizers, and more nutritious food.

Identified challenges, opportunities and stakeholder involvement

- *Address - don't exacerbate – inequalities*: A just transition in agriculture must be undertaken in a way that works for farmers and workers, not against them. Large-scale industrialisation of crops and livestock farming may be at the core of agriculture's harmful contribution to climate change.
- *Barriers faced by women*: A gender-just transition in agriculture needed to advance women's rights in agriculture and be used as opportunity that need to be seized.
- *Land tenure*: Landlessness, insecure access and control over land, and lack of recognition of communal land tenure present major barriers to social justice, food security, adaptation and addressing climate change.
- *Tokenism and rushed approaches*: There is a risk that the language of "climate emergency" and "urgency" could create pressure for quick climate solutions that end up harming farmers and workers, particularly those that are already marginalised, and that undermine processes for careful planning, inclusiveness and addressing inequality. Poorly-planned transitions could also backfire.
- *False solutions*: Even as new technologies are often assumed to bring progress, challenging questions must always be asked about who controls the technology (and who doesn't), who would benefit (and who would lose out), whether impacts of new technologies are reversible (or not), and other possible unintended consequences from profound and largescale changes in farming systems.
- *Developing comprehensive framework*: Impact assessment and planning at regional and national level, inclusive policies, training and re-skilling, social protection, public procurement and inclusion in climate polices viz. NDCs, NAPs, GCF as well as ensuring inclusiveness and participation in planning processes.
- Financing a just transition in agriculture may take significant resources, to cover all the different elements of participation, planning, investment, creation of new sectors, training, reskilling and social protection.

Lessons Learned

Governments must work to reduce climate vulnerability and emissions footprint of their agriculture and food systems, by bringing in policies that promote agroecology over industrial and intensive crop and livestock production. Policies enabling a just transition in agriculture can be integrated into national climate policies and proposals, including Nationally Determined Contributions (NDCs), National Adaptation Plans (NAPs) and the Green Climate Fund (GCF).

Polices should also include regulation of agribusiness corporations, public procurement, and shifting of public finances from the subsidizing of synthetic nitrogen fertilizers, towards supporting agroecological farming practices and markets.

As plans for new production methods, markets and food systems emerge, they must be enabled and supported through planned investment, new livelihood opportunities, and strategies for reskilling, training and social protection where needed. By presenting this process as an unprecedented opportunity to address the concerns, pressures and injustices faced by rural communities, a just transition in agriculture can accelerate the public demand and momentum for ambitious climate action.

Governments must initiate inclusive and participatory dialogues with stakeholder communities including farmers, women, workers, and people up and down the supply chain, to understand the struggles they currently experience within the food system, and the support that they require to effectively make the transition to better farming practices. Unions and civil society organizations have a key role to play in organizing farmers, labour and communities to work together to articulate and advocate for their needs.

Solutions for a just transition must be based on the goal of advancing human rights, including women's rights, the right to food, land rights and workers' rights, in addition to addressing the climate crisis.

Need to improve land tenure and access - particularly for women - as a key strategy for enabling transitions to sustainable land management approaches.

Solutions that increase inequality, concentrate control, wealth and power in fewer hands, threaten land rights, agricultural biodiversity and farmers' livelihoods, or green-wash business-as-usual corporate practices, should not be promoted under a just transition.

Regulation of corporate power will be an essential component of the just transition.

The transformation of agriculture food systems towards agroecological approaches that work for people and nature must be done in a way that works for farmers, farm workers, processors and marginalized communities, including low-income urban consumers. It must provide them with the support, safety nets and social protection required to make these shifts, and to improve working conditions and livelihoods.

2 Just Transition for the agriculture sector in Nigeria

Source/Reference: Just Transition for the agriculture sector in Nigeria (ITUC-5)

2.1 Key characteristics

This case gives an overview of the work on Just Transition in Nigeria in the agriculture sector by the Nigerian Labour Congress (NLC) and its partners.

2.2 Description of low-GHG-emission strategies or policies

Agriculture sector, responsible for 19–29 per cent of global greenhouse gas emissions of Nigeria, is also vulnerable to the impacts of climate change from extreme weather events and drought to high temperatures; which is particularly true for rainfed agriculture accounting for 96 percent of cultivated land of sub-Saharan Africa.

Nigeria's commitments under the Paris Agreement include reducing its greenhouse gas emissions by 20 per cent and 45% compared to its BAU scenario by 2030 without and with external climate finance respectively. The key priority sectors are energy, oil and gas, agriculture and land use, energy, and transport. To reduce emissions, Nigeria will end gas flaring by 2030 and implement climate-smart agriculture, as well as reforestation.

While 28.1 per cent of the world's population works in agriculture; agriculture accounts for more than 50 per cent of total employment in sub-Saharan Africa with about 90 per cent of these jobs are informal with roughly equal shares of men and women work in agriculture.

Agriculture is one of the sectors most sensitive to climate change; with estimate of10 to 25 percent decline in agricultural productivity in Nigeria by 2080 under a Business-As-Usual scenario; with high of 50 per cent in rain fed agriculture in some parts of the north. This in turn would impact GDP, reducing it by as much as 4.5 per cent by 2050, even though the share of GDP that agriculture represents will decline from 40 to just 15 per cent.

2.3 Impact of identified strategy or policy

Roughly 70 per cent of Nigerians work in farming or fishing to some extent. Agriculture contributed around 21.2 per cent to Nigeria's GDP in 2018. Agriculture made up 36 per cent of total employment in 2019, down from approximately 50 per cent in 2015. Only 1 in 20 Nigerians working in agriculture as wage labourer; remainder being smallholder farmers.

Overall, the situation for trade unionists in Nigeria is improving, although there are still systematic violations of workers' rights, particularly regarding the right to go on strike. According to the ITUC Global Rights Index 2020, there are reports of workers that have been dismissed for joining trade unions. The Nigerian Labour Congress (NLC) has four million members, making it one of the largest trade unions on the African continent. The NLC's affiliates include the Agriculture and Allied Employees Union in Nigeria (AAEUN), which is also affiliated to the global union federations IUF and PSI.

Nigeria's lockdown has had huge impacts on Nigeria's informal workers, most of whom rely on daily wages. As result of the combined effects of COVID-19 and global oil price crash, Nigeria's economy is expected to shrink by 3.5 per cent in 2020 with recession is likely to last through 2021, despite national stimulus package that includes microcredit and international finance. The International Monetary Fund predicts Nigeria's oil and gas exports will fall by USD 26.5 billion. Oil and gas accounts for 84 per cent of Nigeria's export income.

The IUF, a global union federation whose affiliates organise workers in the agriculture and hospitality sector, has conducted an initial workshop focusing on climate, meat and dairy. It resulted in a statement recognising the role of agricultural emissions in climate change, particularly meat and dairy. Participants "agreed that negotiating for new jobs and changing methods of production is needed to secure the rights and interests of dairy workers in future" along with "collective bargaining demands for a fair transition to climate friendly jobs".

2.4 Identified challenges, opportunities and stakeholder involvement

On a national level, the NLC has developed a policy on climate change with civil society actors and in 2018, NLC agreed with Friends of the Earth Nigeria to launch a joint project on just transition in two sectors – agriculture and petroleum. The project, supported by Mondiaal FNV, Friends of the Earth Netherlands and the Just Transition Centre, has two goals: build a shared understanding and political agenda between Nigerian trade unions, civil society, and communities regarding what a just transition would look like for these two key sectors in Nigeria, and develop models and best practices for other unions.

The project consists of a multisite, bottom-up study of worker and community views on climate change and just transition. For the agricultural sector, the study looked at the potential for a just transition to agroecology and more sustainable methods of land use and production, as well as better and more skilled jobs.

Interviews with agricultural workers, farm owners, and government representatives showed that workers have made detailed observations of climate change impacts, even though they do not necessarily link climate change with emissions. They understood the idea of just transition when it was explained using familiar concepts and examples but were unfamiliar with the term. They were more familiar with agroecology because of its similarities to traditional farming techniques. Finally, workers understood the need for a transition to more sustainable agriculture. However, many were frustrated because they saw few real options for and many practical barriers to this change.

The project currently includes elements for monitoring working conditions. A potential phase two for this project would entail developing policy measures to promote agroecology at national or regional level and adding additional pilot sites. It could involve steps such as: 1) onsite training for workers, 2) materials and training development, 3) technical support to implement agroecology practices. It could be beneficial to include monitoring indicators based on the pillars of decent work, targeting improvements in the working conditions of agricultural workers, including formalisation of their current jobs.

2.5 Lessons Learned

Work on just transition and agriculture is at a very early stage. Thus, lessons learned from this case study concern how to develop union positions, approaches, and processes in a context where relatively few examples exist.

A key lesson is that Global Union Federations (GUFs) play an important role in helping trade unions deliver just transition. Just transition in agriculture is a new concept with many challenges for workers, particularly those in meat and dairy. To help affiliates tackle it, IUF brought together unions and experts to consolidate a global position and will deliver education, communication resources, and collective bargaining tools.

A second lesson is about building coalitions between labour and environmental movements. In Nigeria, this process started with the NLC's decision to develop a climate change policy. The federation worked with civil society organisations to achieve this. This policy in turn formed the basis for a joint project, exploring a very difficult issue – just transition in the oil and gas sector – and an issue on which the interests of labour and movements are well aligned – just transition in agriculture.

A final lesson is that activities at all levels are needed in order to achieve a just transition. In this case, the Nigerian Labour Congress combined national trade union discussions, dialogue with government representatives, local discussions with agricultural workers and farmers, alliances with social movements, technical work, and work with international partners including the Just Transition Centre. Subsequent steps could consider further resource coordination efforts.

3 Multi-year research-policy programme: Incorporating just transition strategies into developing and least developed countries climate policies

Source/Reference: Multi-year research-policy programme: Incorporating just transition strategies into developing and least developed countries climate policies (Climate Strategies-1)

3.1 Key characteristics

As majority of work in just transition is developed country focused; building on previous Climate Strategies (CS) initiatives on just transitions a research-policy programme has been developed to explore just transition strategies in the developing country context with an objective to provide evidence and insights to support the introduction of just transition strategies in developing countries. First phase which is culminated was a conceptual foundation for the second phase (2020-2021), CS worked within country partners in three developing countries viz. Ghana, Colombia and Indonesia, which

were selected due to their diverse characteristics and geographies. The concept of just transition (JT) is explored and developed to different stages in each of these countries, and therefore each partner developed their own approach to stakeholder engagement which best suited the needs of their country. The third phase of initiative (launched July 2021, duration 2 years) would continue to work with partners in Ghana, Colombia and Indonesia to further develop their JT strategies.

CS has also introduced 6 new countries; Bangladesh, Vietnam, Laos, Argentina, Kenya and Malawi, all selected to their political, social, economic and geographical diversity with objectives to create a network of developing countries looking to implement JT strategies in their climate plans. CS acts as a facilitator for 'south to south' learning, and we encourage these countries to share knowledge between them, finding commonalities in their similarities and differences.

3.2 Description of low-GHG-emission strategies or policies

Recognising that low-carbon pathways need to happen across all sectors, not just the fossil fuel industry, the strategy is to work with country partners to identify in which sectors JT strategies would make the most impact, which will be different in most country contexts. SC recognises and promotes the 7 principles of JT developed by SEI, which includes: 'actively encourage decarbonisation' and 'avoid the creation of carbon lock-in and more "losers" in these sectors' and it is then up to the partners to shape and co-create what their diversification pathways could look like, and we support the translation of these broader just transition concepts and principles into the local context. One of the objectives of the first phase of this programme (with Ghana, Indonesia and Colombia) was for countries to incorporate JT concepts into their NDC. The Dala Institute (SC's Indonesian partner) effectively engaged with their government, and it was announced that JT concepts are included in their revised NDC and their updated Long-Term Strategy for Low Carbon and Climate Resilience 2050 (LTS LCCR).

3.3 Impact of identified strategy or policy

Each country is at a different stage of their 'just transition journey', therefore it has been identified that strategies must be driven by country partners, with Climate Strategies acting as support. In the same way, the impacts of each country's JT strategy will be different. The impacts of phase 2 (9 countries), which have been developed from phase 1 are as follows:

- *Shift the mindset of governments that JT is relevant to developing countries by learning*
- *how it can be applied to different contexts*
- *Increase active dialogue between governments and societal stakeholders*
- *Influence government uptake of JT by working with providers of capital*
- *Create a network of countries implementing JT in their climate plans*

As mentioned, in Indonesia JT has now been included in their NDC and LTS LCCR. In this case the project will continue to work to implement these strategies and identify which sectors will have maximum impact.

3.4 Identified challenges, opportunities and stakeholder involvement

Engagement with stakeholders in Ghana, Indonesia and Colombia was initially a challenge, mainly due to the different actors such as informal workers, or indigenous communities and the most effective method of engagement. To overcome this in the next phase of the programme the first activity for each country is to devise a stakeholder and communication engagement plan to identify who to engage with and the best method of engagement. Another challenge was engagement with government officials. This was due to a variety of reasons such as government officials not being aware, or confident in their understanding of JT. Or in Ghana where government officials due to the political system and party politics were not as willing to cooperate with an 'external' project.

This programme has shown the importance of local knowledge, expertise and contacts through the in-country partners, which has a huge opportunity as the insights gained from groups that have so far not been heard on climate policymaking, let alone just transition strategies, such as informal workers in Ghana. As each country developed their own methodologies, the next stage of this programme will focus on knowledge-sharing between countries to develop their own strategies.

In Indonesia to increase the understanding of just transition in the domestic context, stimulate discussion, and improve the confidence of government officials taking the lead on the subject, a presentation was delivered by Dala Institute to stakeholders prior to each meeting. This included the background and history of just transition, the importance of just transition in the domestic context, and case studies of just transition implementation around the world.

3.5 Lessons Learned

Number of lessons have been learned from this programme, which are being addressed in the second phase with the 6 new countries. The major finding was that there is no 'one size fits all' approach to just transitions in developing countries; both the 'just' and the 'transition' part of strategy must be tailored to and defined by each individual country. In the second phase we encourage and facilitate 'south-to south' learning so that country partners can learn from and develop ideas with one another. Another major learning was from this programme was understanding the importance of establishing and maintaining relationships with relevant stakeholders to enable ownership of just transition in a specific national context.

Secondly, this programme has highlighted the importance of local knowledge, expertise and contacts through the in-country partners to place people at the centre of just transition. By collaborating and co-producing climate strategies they can also address current and potential inequalities. Finally, the programme emphasised the need to extend the scope of just transitions beyond developed countries and realise the global scope of the just transition concept. The study gave some indication as to which actors are interested in being involved in discussions around what just transition means in the local context and how just transition measures may be implemented.

Going forward effort will be to continue disseminate the findings to increase overall awareness and understanding of JT in developing countries. There are anticipated challenges such as working with Malawi, where the government is expanding the coal sector, to co-create JT strategies that will have an impact in this context.

4 Just Transition for the energy sector in the Philippines

Source/Reference: Just Transition for the energy sector in the Philippines (ITUC-3)

4.1 Key characteristics

This case gives an overview of the work on Just Transition in the Philippines in the energy sector by the trade union SENTRO.

4.2 Description of low-GHG-emission strategies or policies

Increasing renewable energy generation and energy efficiency is essential to meet the goals of the Paris Agreement. These two measures alone could provide 90 per cent of the emissions reductions needed by 2050. The commitment of the government of the Philippines under the Paris Agreement is to cut CO2 emissions by 70 per cent by 2030, if climate finance and technology are made available. This reduction would come from the energy, transport, waste, forestry and industrial sectors. Part of this commitment also includes increasing renewable energy capacity, which is in line with the country's Renewable Energy Act (2008) and the National Renewable Energy Plan.

In 2015, coal-fired power provided 44 per cent of electricity production in the Philippines, though that share is almost certainly higher today. The government's focus so far has been on increasing private sector investment in renewable energy with tax incentives and tenders, as opposed to driving renewable energy investment through the country's 120 electricity cooperatives. Prior to COVID-19, the overall economy was growing and growth in the energy sector was expected to follow.

4.3 Impact of identified strategy or policy

According to the Philippines' trade union report on SDG implementation, a low and declining rate of unionisation has negative implications for decent work. Low unionisation has resulted in low collective bargaining coverage which, in its turn, may drive average wages down. The absence of trade unions in some companies deprives workers of the first line of defence against abuse.

At the same time, the government of the Philippines has committed to just transition, passed a Green Jobs Act in 2016, and was engaged in a project with the ILO to explore implementation of the Act. The Ministry of Labour led this project and engaged unions in social dialogue.

Sentro ng mga Nagkakaisa at Progresibong Manggagawa (SENTRO) is a national trade union federation, and an ITUC affiliate, with more than 80,000 members across the public, private and informal sectors. SENTRO has well developed positions on climate change and just transition. It is one of the signatories to a successful petition to the Philippines Commission on Human Rights on whether big polluters – 47 high-emitting companies – could be held liable for human rights violations due to climate change. SENTRO has built a coalition with civil society organisations for promotion of policy coherence on renewable energy and green jobs, called "Center". The federation is an active participant in the ITUC's delegations to the UNFCCC processes and in Trade Unions for Energy Democracy (TUED), a global initiative that works to promote democratic control of energy and solutions on climate change and energy poverty.

While SENTRO is engaged in climate issues and sees them as inseparable from matters of public ownership of the energy sector, the energy sector in the Philippines has been privatised since 2001. SENTRO has been working to restore public ownership of the energy sector, primarily through work to expand electricity cooperatives. Electricity cooperatives are owned by consumers/cooperative members, as opposed to being owned by corporations. Currently, electricity cooperatives cover 50% of the electricity distribution.

SENTRO works to promote just transition in three ways. First, it works with 23 cooperatives with 30 million household members to promote renewable energy. In a pilot project on Masabate Island that is served by an electricity cooperative, SENTRO brought in technical expertise to help the cooperative develop renewable energy generation for the island's one million residents. Second, SENTRO has engaged in social dialogue with the government to achieve policies to drive the renewable energy transition in cooperatives, as opposed to solely through the private sector. Third, SENTRO works with its affiliates to ensure that there are provisions related to just transition in collective bargaining agreements (CBAs). For example, the CBA with Siemens Electric Power includes capacity building for consumers and unions on just transition and climate change, and a commitment to build an industry roadmap for decarbonisation. Similarly, CBAs for coal sector workers include expanded severance and retirement benefits so that coal workers have better protection if their jobs are axed.

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4.4 Identified challenges, opportunities and stakeholder involvement

SENTRO's approach to just transition and energy democracy illustrates best practice for trade unions. The federation makes use of traditional and non-traditional tools such as social dialogue with government on policy, collective bargaining with employers, alliances with civil society, litigation, international activity and community organising.

SENTRO has a strategic approach to building power, including building a base with communities. It works within the existing structure of public ownership, electricity cooperatives, to achieve a just energy transition and organize with communities that own cooperatives. External actors that want to support just transition and trade unionism in the Philippines should look to support this transition in cooperatives.

If the political context for SENTRO and other trade unions was bad before COVID-19, now it has worsened. Filipino trade unionists and their families face threats to their lives and denial of basic rights. It is absolutely essential that external actors, from governments, development actors and civil society organizations, support Filipino unions in their struggle for safety and rights, in addition to support for just transition.

4.5 Lessons Learned

This case study provides an insight into how trade unions, with adequate expertise and support can play a role in the advancement towards a lower carbon society. SENTRO's cooperation with development actors, including Trade Union Solidarity and Support Organisations (TUSSOs) or direct bilateral support from trade unions, has proven fruitful. There is a continuous need to bring the situation in the Philippines to the attention of international actors. Trade unions are a precondition for decent work, which in turn is an essential part of achieving the Sustainable Development Goals and poverty eradication.

5 Management of Expertise Development Strategy

Source/Reference: Management of Expertise Development Strategy (Indonesia-1)

5.1 Key characteristics

Indonesia's power sector is on its way to decarbonization. The decarbonization roadmap forces Indonesia especially the company to update its expertise development strategy. Expertise required for energy transition has been identified. Accordingly, an expert pool mechanism has been developed to align with the planned decarbonization

5.2 Description of low-GHG-emission strategies or policies

The Government of Indonesia has set an unconditional target of 29% and a conditional target (with international assistance) of up to 41% emissions reduction compared to the business as usual (BAU) scenario in 2030, on its Nationally Determined Contribution (NDC). The NDC'S target is distributed to five sectors, including energy sector. By 2030, energy sector has to reduce 314 million tons of CO2 emission (unconditional), 53% of which should be attained by power sector. The strategies of reducing emissions from the power sector involve (a) increasing renewable capacity; (b) improving energy efficiency, and (c) fuel switching.

In 2020, state own enterprise who manage power sector in Indonesia launched its green transformation program aiming to increase capacity of renewable energy more than doubled by 2025, implementing NDC strategy of increasing renewable energy share to 23% by 2025.

5.3 Impact of identified strategy or policy

The state own enterprise in May 2021, publicly announced its Net Zero Aspiration by 2060 requiring shifting from coal-based power generation to renewable-based power generation. Coal power plants will retire gradually and be replaced

by renewable energy. and it effects to many things, including to the work force. The ability to plan, develop, operate, and maintain new technology and renewable energy facilities is an essential role in supporting company's decarbonization plan which include human capacities. Experts who handle electricity are having expertise in coal power generation and with new policy, that expertise will be no longer needed. This transformation also impacts to workforce in coal mining field.

5.4 Identified challenges, opportunities and stakeholder involvement

One of the technical challenges is the intermittency characteristics of variable renewable energy (VRE) such as solar PV and win power, which requires the company to improve its capacity both technical and human capital capacities. Another challenge is related with the management of the workforce. To address these challenges, the company has updated its expertise development strategy by adding new key competencies, among others, smart grid, energy storage, climate and environment. Moreover, an expert career path has been established, which is divided into four structures and nomenclature, i.e. generation and renewable energy; transmission; distribution; engineering and technology, as stipulated in the new company's Board of Directors Directive on Expertise Career Path.

As the number of experts in those new competencies is still limited, it is crucial to build institutional capacity and arrangement (e.g. capacity building, create the business process, certification, guidance, and procedures), setting up research, and collaborate with stakeholders. Therefore, the company strengthens its internal organization and tools as well as collaborates with stakeholders, both bilateral and multilateral. For example, under various cooperation with multi-stakeholders, the employees have benefited from capacity building on new technology, organized both in Indonesia and abroad.

5.5 Lessons Learned

Climate change has driven energy transition, which in turn influences the way power sector manages its expert career development. Indonesia through its state own enterprise addresses the challenges as well as explores opportunities of the energy transition by anticipating the expertise needed for energy transition and strengthen collaboration with multi-stakeholders.

6 Just Transition in Ireland – Midlands Region

Source/Reference: Ireland: Just Transition in Ireland – Midlands Region (EU-6)

6.1 Key characteristics

Ireland has been responding to the need for a just transition as a result of the shift away from solid fuels as a power generation source. The Programme for Government commits to ensuring that the transition to a low-carbon, climate-resilient and environmentally sustainable economy is fair. The impact of this transition in Ireland has been primarily concentrated in the Wider Midlands due to the closure of peat-fired power stations and the end of peat harvesting by Bord na Móna, and is the first test of Ireland's just transition.

The announced closure of the two power stations in the Midlands region has impacted regional and local employment, particularly for employees of the semi-state-owned peat harvesting company, Bord na Móna, and has significantly affected the region's economy.

6.2 Description of low-GHG-emission strategies or policies

Supporting workers, companies and communities affected by transitioning to a low-carbon economy by achieving Ireland's climate targets of zero-emissions by 2050.

Ireland has responded to a just transition in the Midlands Region through five interventions: (i) The National Just Transition Fund 2020; (ii) Establishment of the Just Transition Commissioner; (iii) Bord na Móna Enhanced Decommissioning, Rehabilitation and Restoration Scheme; (iv) National Parks and Wildland Service Peatlands Scheme; (v) Midlands Retrofitting Programme.

6.3 Impact of identified strategy or policy

The National Just Transition Fund is supporting innovative and employment generating projects in the Midlands with 44 projects. The projects are diverse and cover a range of opportunities for the region and include new enterprise hubs,

supporting local business development, research and exploratory studies, tourism and heritage projects, and opportunities for reskilling.

Bord na Móna's large-scale peatlands restoration project is now underway. The plan will protect the storage of 100 million tonnes of carbon dioxide (CO2) emissions, sequester 3.2 million tonnes of carbon to 2050, enhance biodiversity, support approximately 350 jobs and contribute to Ireland's target of being carbon-neutral by 2050.

The National Parks and Wildlife Peatlands Restoration Scheme will take place in 2020 and 2021 includes peatland restoration measures on almost 1,900 hectares of protected raised bogs in the Midlands region, along with the development of drainage management plans and other peatland management and conservation measures.

There is also Midlands Retrofitting Programme, where local authorities are on course to retrofit 750 homes in 2021 of selected council-owned houses in the Midlands region will be retrofitted to a Building Energy Rating (BER) of "B2" (or to a cost-optimal level).

6.4 Identified challenges, opportunities and stakeholder involvement

The Just Transition Commissioner, was appointed by the Minister for Environment, Climate and Communications in November 2019 to engage with stakeholders in the Midlands region and recommend the essential elements of a just transition. The Commissioner has engaged extensively with stakeholders in the region and proposed a series of recommendations to support a just transition in the Midland's region in three separate reports to the Minister. In developing these three reports, the Commissioner has had extensive engagement with key stakeholders and those affected by the transition in the region such as the Midlands Regional Transition Team, Bord na Móna, ESB, Local Authorities, and Regional Assemblies. Ireland's upcoming Climate Action Plan will provide detail on further actions to be taken as part of the Government's overall just transition response in the Midlands region and addressing the recommendations of the Just Transition Commissioner.

6.5 Lessons Learned

Ongoing engagement with areas and workers affected by the transition is essential for Government to create and implement targeted supports that will benefit those affected. As part of the upcoming Climate Action Plan 2021, it will detail how the National Dialogue on Climate Action (NDCA) will be the key mechanism for facilitating the social dialogue process as part of the just climate transition. The strong participative approach of the National Dialogue will assist all stakeholders in identifying and prioritising the challenges of transitioning are and how to respond.

7 Just transition strategies in Spain

Source/Reference: Just transition strategies in Spain (ITUC-8)

7.1 Key characteristics

Spain has made the most progress in implementing just transition measures, which have been articulated through a Just Transition Strategy approved by the Government in 2020, which includes a new instrument for communities or territories affected by closures that is extremely important: the Transition Agreements Fair; in addition to a diagnosis of the ecological transition and its effects and the design of general measures for the just transition in economic sectors, The purpose of these agreements is that, through participatory processes, Comprehensive Territorial Action Plans are drawn up, which must include roadmaps with specific actions on a schedule and with the establishment of synergies and collaboration between the administrations and agents concerned for the financing of development projects. activities that create new jobs.

This instrument means a notable change with respect, for example, to the coal plans that were previously approved in Spain, in which there was no dialogue and territorially agreed planning, but fundamentally protection programs for the workforce and indiscriminate aid for infrastructures and new companies. These plans barely succeeded in generating stable alternative employment to mining in these communities, and they certainly did not change the foundations of their economic development.

The Just Transition Agreements, however, are signed between the Ministry for the Ecological Transition and the regional and local administrations and include a very broad public participation process, with companies, unions and social organizations, in which, based on a diagnosis prepared on the area, potential investments and projects and possible sources of financing for them are identified. Finally, the Just Transition Agreement is signed between all the institutional agents involved.

The Just Transition Strategy also incorporates an important instrument, which is the creation of an Institute for Just Transition, dependent on the Ministry for Ecological Transition, whose functions are: technical, financial and legal assistance for just transition agreements, identification and optimization of opportunities for economic activity in these areas and the promotion of the coordination of industrial, training and employment policies, between various ministries and with regional authorities and municipalities.

7.2 Description of low-GHG-emission strategies or policies

The processes for the fair transition agreements that have been launched so far are related to the closure of mining activities and the closure of almost all the coal-fired power plants that were in Spain and that are being replaced by wind farms or photovoltaic plants.

Currently, the Institute for Just Transition is processing 14 fair transition agreements in Aragon (1), Castilla y León (3), Asturias (3), Andalusia (3), Galicia (2) for the closure of coal-fired power plants and in Garoña (Burgos and Álava) and Zorita (Guadalajara and Cuenca) for two nuclear power plants that have already been closed.

In addition, Collaboration Protocols have been signed with the regional administrations (Autonomous Communities) for the coordination of actions around the agreements.

It should be noted that there was previously a Framework Agreement for a fair transition of coal mining and sustainable development of mining regions in 2018, and another Agreement for a fair transition of thermal power plants in 2020, signed by unions, companies and the Government, which are being a reference as an instrument of sectoral just transition on an international scale. These framework agreements are complementary to the processes of the territorial fair transition agreements and fundamentally seek to protect the workers of the affected templates.

7.3 Impact of identified strategy or policy

None of these just transition agreements has yet been approved and therefore the specific projects and their financing for the reactivation of the zones have not yet been defined. Therefore, the effects on job creation remain to be seen in the near future.

7.4 Identified challenges, opportunities and stakeholder involvement

As a result of the information that has been presented about the different projects, there are from projects with a business or institutional promoter with a lot of detail to very generic proposals with hardly any specificity. The selection of one and the other must be made based on the viability of the project over time, the capacity to generate stable employment, the possibility of using endogenous resources in the area and that they are part of the ecological transition and energy and in a change of production model.

CCOO has participated very actively in the processes to carry out a good diagnosis of the zones in transition and to suggest projects in them, instruments that lay the foundations for developing ecological transitions while protecting workers, but it also demands more public means to do it more quickly. In this sense, the CCOO has carried out diagnostic studies of the territories affected by the processes in transition, with the aim of proposing proposals.

Another point that Workers' Commissions (CCOO) calls for is scrupulous management for the just transition, demanding that the necessary public mechanisms and controls be established to guarantee effective, efficient and transparent management of these funds, whether European or national. That both the suitability of the economic expenditure and the quality of the projects to be financed be guaranteed.

7.5 Lessons Learned

Projects that receive public aid should prioritize the hiring of workers from surplus stocks (from mining and thermal power plants). It is also very important to provide training for employment in those areas associated with the type of projects that are going to be approved.

The projects have to be focused on decarbonisation and reduction of emissions, in that sense there is no room for projects based on fossil fuels or new high-capacity road infrastructures with which Spain is saturated, which delve into a transport model based on roads and who has abandoned the railway for these other investments.

To a great extent, the success of the implementation of social protection and economic reactivation measures depends on anticipation and planning. You can't be responding accelerated or hasty depending on how the problems come to us, this way of reacting is doomed to failure in most cases.

8 Just Transition in coal mining and oil production in Colombia

Source/Reference: Just Transition in coal mining and oil production in Colombia (15f – ITUC-6)

8.1 Key characteristics

Among various energy sources available, coal a largely prevalent and low-cost source of energy with emissions from are still rising on a global scale. Among several things, transition requires, on political and economic effort, inclusion of externalities in its pricing, economic diversification and addressing impact on affected workers and communities; in order to move towards lower carbon economies without burdening workers or perpetuating inequalities.

8.2 Description of low-GHG-emission strategies or policies

Colombia has developed a Green Growth Strategy (CONPES 2018) which contains set of policies connected to it, such as national climate change policy and waste management policy, both approved in 2016, and its policy on sustainable construction from 2018. It has developed analysis methods for the potential of green jobs and the greening of enterprises. In late 2019 the Ministry of Labour signed an agreement with the ILO on promoting green jobs and work within a just transition framework.

Colombia, in its INDC indicated that in 2010 the country produced estimated GHG emissions of 224 Mton CO2eq, with mitting major sectors of agriculture, forestry, and other land use; energy; and waste and industrial processes and set target at 268 Mton CO2eq. by 2030. The government has also set a target of 4 GW of nonconventional renewables (wind and solar) by 2030 implying 74 per cent share of renewable energy in the power generation grid, which is currently made up primarily of hydropower and thermal generation, including diesel. Though, present ownership of generation is almost evenly split between public and private entities, since the government plans to meet its renewables target through tenders to private companies, the share of private ownership in the sector is likely to increase.

8.3 Impact of identified strategy or policy

Colombian unions have a long-term vision for the country and its path to decarbonisation. They acknowledge the threat of climate change and the need for a just transition, recognising that demand for coal, oil and gas is likely to decline. They would like to see Ecopetrol, the state-owned oil company, remain in state hands with mandate to develop renewable energy and become leader in the energy transition. They would also like to see just transition process to devise plans and proposals for workers, regions, the company, and the country as a whole. Resources for this process and for plans should come from industry. The unions are seeking international cooperation to obtain ideas and concepts they can use for their own discussions.

Before COVID-19, trade unions from the sector had begun planning for a just transition for coal and oil workers. Coal demand was declining and the possible decline also in the demand for oil, was putting jobs at risk. In 2019, a union-led workshop on just transition in 2019 was carried out. Unions, representatives from some coal producing companies, and representatives from IndustriAll, Mondiaal FNV, and the Just Transition Centre discussed the potential for a just transition. The unions concluded that it would be important to prepare for a shift away from coal, for example through the diversification of mining into other minerals, strong severance and pension agreements, and retraining and reskilling of workers.

Multinational enterprises (MNE) own most of Colombia's coal mining sector. IndustriAll has Global Framework Agreements with two of these, Anglo American and Glencore. IndustriAll has played a key role in supporting Colombian coal and oil unions in their efforts to ensure fair agreements with employers and, globally, in ensuring agreements on safe conditions for coal miners to return to work during COVID-19.

8.4 Identified challenges, opportunities and stakeholder involvement

The workers in Colombia's coal and oil sectors need a just transition. Unions from the sector have been working on this, adopting positions and, via international support, being able to receive further technical assistance and launching discussions with employers. Social dialogue with the government is yet to take place.

The extractive industries in Colombia encompass over 30 different products, the most significant being coal (circa 11.9 per cent of exports from Colombia in 2015), ferronickel, precious metals and construction material. The production and use of oil are significant contributors to global greenhouse gas emissions. The use of oil for transport is responsible for 23 per cent of global energy-related CO2 emissions. Methane emissions from oil and gas production are also substantial, accounting for nearly 15 per cent of all energy sector greenhouse gas emissions.

From a climate perspective, Colombia stands out as the world's fourth biggest coal producer and the biggest producer of coal in Latin America. Almost all of Colombia's coal production is for export. Colombia is the third largest oil producer in Latin America through the majority state-owned company Ecopetrol97 Prior to the COVID-19 pandemic, discussions were in progress on the privatisation of Ecopetrol.

Many jobs in traditionally secure sectors for workers – mining and oil and gas – have been outsourced. Colombian mining and oil and gas unions are affiliated to the global union federation IndustriAll. The lockdown in Colombia has been particularly hard on poor and working-class people, with hunger crises reported in Bogotá and among indigenous communities around the country. The COVID-19 crisis has also had a dramatic impact on demand for oil and coal, two of Colombia's main export sectors. The International Energy Agency projects that global energy demand will drop by six per cent in 2020, with electricity demand dropping by five per cent and the total share of gas and coal in the global energy sector dropping by three per cent to 2001 levels. Analysts expect that the global supply of coal will outstrip demand throughout 2020 and into 2021. Colombian oil production is expected to drop by 17 per cent. Investment in the sector is projected to fall by 55 per cent. This will mean job losses in coal mining, coal transport, and oil and gas exploration and production. Immediate privatisation of Ecopetrol may now be less likely due to the current drop in value of oil and gas assets related to the oil price crash.

8.5 Lessons Learned

A key lesson learned is that in order to build societal resilience, it is important to guarantee the building blocks of just transition, such as social protection and the creation of decent work. At the end of 2019, Colombian coal and oil unions were ahead of employers and their government in pushing for change. Six months later, job losses have occurred overnight. IndustriAll´s relationships with MNE mine owners may be strategic when negotiating agreements for laid-off workers.

A second lesson is that transitioning Ecopetrol to renewable energy early on would have protected jobs and revenues to some extent. Renewable energy companies have done relatively well during the COVID-19 crisis, at least compared to oil and gas companies. Unions in other countries, including South Africa, Norway and Denmark, are at different stages of transitioning state-owned energy companies from fossil fuels to renewables. Peer-to peer learning and exchanges on this issue could be valuable. A sectorial dialogue could be extended, in a second phase, to include companies that are currently working in renewables in the countries in question. Moreover, when social dialogue is not possible, trade unions can and should prepare their position on and analysis of which components are needed for a given sector to ensure a just transition.

Last but not least, current discussion and cooperation on just transition via the ILO can provide interesting possibilities for social partners to engage in discussion on an array of sectors. The ILO has been carrying out potential entry point analysis for Colombia and is currently in dialogue with the Ministries of Labour and the Environment on steps to include just transition in the NDCs and to promote the participation of social partners.

9 Just Transition for the energy and mining sectors in South Africa

Source/Reference: Just Transition for the energy and mining sectors in South Africa (ITUC-2)

9.1 Key characteristics

The global energy sector is responsible for over two-thirds of global CO2 emissions, with coal-fired power producing 54 per cent of CO2 emissions from the sector. CO2 emissions from coal-fired power are the "single largest source of global temperature increase." Phasing out coal-fired power, phasing in clean energy, and ensuring a just transition for coal workers and communities is essential to meaningful action on climate change. Most of South Africa's emissions come from coal-fired power. South Africa needs to reduce its CO2 emissions and has committed to doing so. Its Nationally Determined Contribution (NDC) contains a target to limit greenhouse gases to between 398 and 614 MtCO2eq34 over the period 2025–2030. This target is equivalent to a 19–82 per cent increase based on 1990 levels. South Africa has included just transition in its NDC. South Africa's coal-fired power fuels 90 per cent of the country's electricity via the state utility Eskom. The remainder of the electricity supply comes from nuclear, hydropower, and conventional renewables.

Eskom, and the mines tied to it, is an important source of employment. In a country with high unemployment, Eskom employs circa 131,000 workers directly and many others on a contract basis. Eskom plays a key developmental role in supplying low-cost electricity to poor and working-class South Africans, particularly black South Africans who were deprived of access to modern electricity by the apartheid state. Eskom's lowpriced power is also crucial to the competitiveness of South Africa's export sectors, particularly minerals, mining, and manufacturing.

South African unions and national tripartite structures are strong and formalised. Although trade union density is historically low at 28 per cent, it is still higher than in many other countries. Its tripartite body, the National Economic Development and Labour Council (NEDLAC), has a constitutional mandate. Unions have been engaged and have contributed in consultation processes.

9.2 Description of low-GHG-emission strategies or policies

To reduce emissions from the power sector, the South African government has relied so far on tenders to the private sector to develop the renewable energy supply. Regulations limit the ability of municipalities, communities and companies to build renewable energy projects for their own use.

Prior to COVID-19, Eskom faced financial and operational difficulties. The government intended to split Eskom up through what is known as unbundling. Generally, the unbundling of utilities is the first step in the privatisation process and results in job losses. The South African government has, however, said that no jobs will be lost and that Eskom will remain a state-owned entity.

The World Bank has concluded that unbundling and privatisation do not promote a transition away from coal and are not required to achieve it. Similarly, trade union experiences from Australia and Canada show that decarbonisation in the power sector is more difficult to achieve when the sector is privatised. Experiences from power sector liberalisation in Eastern Europe indicate that the process does not necessarily reduce prices for consumers. Nonetheless, governments and IFIs offering international finance to refinance Eskom's debt and fund local just transition plans have two conditions: an accelerated plan for coal plant closure, and the unbundling and privatisation of Eskom.

The South African government has promised coal and power station workers a just transition but understand that it is going to be challenging, particularly in light of the COVID-19 crisis. Eskom is already closing its older coal-fired power stations with no social or economic plans in place as required by law. If unbundling and privatisation go forward, the scenario will be challenging due to job losses.

To date there have been multiple processes to stake-out a future course for Eskom, South Africa's coal sector, and the tens of thousands of workers in the sector. These range from social dialogue in NEDLAC to a Presidential Task Team, a process under National Planning Commission with strong community engagement, and an agreement from the government to form a Presidential Climate Change Commission to produce a just transition plan.

9.3 Impact of identified strategy or policy

South African trade unions support action on climate change and efforts to cut emissions through just transition. They were pioneers on these issues. The Congress of South African Trade Unions (COSATU) is South Africa's largest federation of trade unions and was founded in 1985. It has 1,800,000 members and is a member of South Africa's governing Tripartite Alliance. Its affiliates include the National Union of Mineworkers (NUM). It has had a longstanding commitment to addressing climate change through just transition, including a 2009 Congress resolution that "climate change is one of the greatest threats to our planet and our people". Similarly, in 2012 the National Union of Metalworkers of South Africa (NUMSA) adopted a position on climate action through just transition.

However, South Africa's rapidly deteriorating economic situation means that the unions oppose any action that would cut existing jobs. South African workers now face a deep recession with accelerating job losses, increasing costs for energy, food, imported goods, and a hunger crisis during lockdown.

South African trade unions reject privatisation of electricity generation, both because of the likelihood of job losses and because it is inconsistent with Eskom's developmental role in South Africa. They have also opposed privatised renewable energy tenders.

The ILO, IndustriAll, ITUC Africa, and the Just Transition Centre have worked with and learned from South African trade unions on just transition issues, particularly those associated with the phaseout of coal. Activities have ranged from convening meetings, joint workshops, sharing experiences and technical information, to acting as a labour resource in discussions and processes.

In early 2020 COSATU launched its own proposal for a social compact, with a rescue plan for Eskom, just transition, and expanded generation of renewable energy by Eskom and municipalities as essential elements. The social partners discussed the plan in NEDLAC, where it received strong support. COSATU has pointed out that international financing should focus on job creation in renewable energy manufacturing and other areas, as opposed to privatising Eskom.

Due to COVID-19, discussions about the social compact have been put on hold. When they are resumed, two things will be crucial: measures for Eskom, or the power sector, should maintain and create decent work, and employment creation should be a priority.

9.4 Identified challenges, opportunities and stakeholder involvement

South Africa has a good starting point for just transition in the power sector. It has strong unions with long-standing support for just transition, government commitments to reducing emissions and just transition, established social dialogue forums, a single state-owned power sector utility, and a mobilised civil society.

Yet transforming the coal sector has been proven difficult. Certainly, power relations and the long-term effects of corruption under the previous government are key factors. But the biggest practical barrier has been the lack of new jobs. This is perhaps the most important lesson learned. One consequence of the high unemployment scenario is that workers need to see real plans for new, good jobs as a "benefit" of the sector transformation. Without that, changes will likely be opposed, including decarbonisation, because workers recognise that losing their jobs means going straight into unemployment, with few social safety nets and therefore poverty.

In line with this, workers and unions have been opposing efforts to privatise and unbundle the power sector unless they know this will not threaten jobs. Evidence from other countries shows this opposition is well-founded. Privatisation and unbundling almost always result in job losses.

The government's initial policy on decarbonisation involved privatising power generation through tenders to renewable energy developers. It produced a paradoxical result. Unions with longstanding support for just transition, action on climate change, and renewable energy have opposed decarbonisation in part because it was coupled with privatisation and job losses. Thus, a second lesson learned is that power sector privatisation could make the decarbonisation path more difficult, as it introduces additional threats of job losses.

9.5 Lessons Learned

In this context COSATU's social compact proposal from January 2020 illustrates best practice by a social partner. The proposal was a step towards improving the possibilities to power sector decarbonisation. With contributions from all partners, it brought together three core elements: a financial plan for Eskom involving workers' capital; expanding renewable energy generation by public entities – Eskom, municipalities and communities; and maintaining jobs. International finance would also have a role in this proposal by funding renewable energy manufacturing in South Africa.

10 India's Sustainable Partnership for Rooftop Solar Acceleration in Bharat' (SUPRABHA)

Source/Reference: India's Sustainable Partnership for Rooftop Solar Acceleration in Bharat' (SUPRABHA) (CIF India-1)

10.1 Key characteristics:

Historically coal being the cheapest way to provide energy and as renewable power becoming cheaper with time and scale supply variability of renewable energy and the cost of energy storage to manage this variability, along with limitations in the current grid infrastructure undermining its distribution, has affecting the expansion of renewable energy; apart from geographic distribution of regions having high solar power potential due to high radiation and coal-rich regions.

Multiple strong drivers towards an accelerated energy transition and country's vulnerability to climate change has put pressure on national and local governments to reduce fossil fuel use; as installation cost of renewable energy are dropping rapidly becoming competitive even with fossil fuels whose costs are under pressure on multiple fronts including high transportation costs.

Declining employment in coal sector, in contrast to growing job opportunities in renewable energy sector, is both a symptom and driver of energy transition; highlighting need for conscious and proactive planning to manage allocation of benefits and harms associated with India's energy transition.

The national government has set ambitious renewable energy goals that include the development of 175 gigawatts (GW) of renewable energy by 2022. However, such a transition away from coal and towards renewable energy will heavily impact its coal sector that currently provides 45 percent of India's total primary energy demand, which is why coal lies at center of discussions about a just energy transition in India. There are several barriers to this transition.

10.2 Description of low-GHG-emission strategies or policies:

CIF and its partner MDBs have contributed to India's just transition through support for cross-sectoral and multi-stakeholder dialogues and also had technical assistance component for capacity building programs for both large scale solar park and rooftop solar projects across several states of India.

CTF, IBRD, and other partners also implemented a USD 13 million technical assistance and massive capacity building program known as SUPRABHA (Sustainable Partnership for Rooftop Solar Acceleration in Bharat).

The SUPRABHA program demonstrates that skills will be required across the entire economy, and particularly, across the emerging renewable energy sector, including the upskilling of investment analysts, policy makers, distribution utilities officers, developers, installers, and maintenance staff. As areas such as new energy-efficient building standards, industrial decarbonization, the rehabilitation of coal mining areas, and the repurposing of coal fired power stations develop, so too will new opportunities arise and new skills be needed. This suggests that a key component of just transitions will be to anticipate new skills requirements across entire sectors and put in place the institutions and curricula needed to support the development of existing and emerging skills needs.

10.3 Impact of identified strategy or policy:

SUPRABHA offered technical assistance to 17 states to support: (i) policy and regulatory updates; (ii) national media campaigns; (iii) improving readiness for lending; along with (iv) scalable, standardized, and sustainable training modules.

Under SUPRABHA, Skill Council for Green Jobs has partnered with 14 training institutions to train bankers, entrepreneurs, distribution company (DISCOM) officers, rooftop solar developers, and maintenance staff across 17 states; training over 1,542 participants since mid-2018. Training program designed for loan appraisal officers aimed to provide thorough understanding of structure of grid-connected rooftop solar PV sector, business models, financing opportunities, risks and risk mitigation strategies, as well as project costing and evaluation, whereas training programs for DISCOM officers provided an in-depth understanding on streamlining processes of inspection and integration into grid across consumer spectrum.

Entrepreneurs Training program module, seeks to enable entrepreneurs to understand project management approaches, business models, financing opportunities, risks and risk mitigation strategies, along with costing, thus further accelerating the growth of grid-connected rooftop solar systems across the consumer spectrum.

10.4 Identified challenges, opportunities and stakeholder involvement:

The focus on skills development within just transition discussions and initiatives is often limited to reskilling coal miners to help them find alternative employment. However, just transitions, more broadly, are going to require significant decarbonization across the entire economy, and this, in turn, will open up a wide range of new employment and livelihood opportunities. For example, development of rooftop solar energy is not only a technical and financial process, but also a social and institutional learning and capacity development process.

Balancing tension between local-level consultation and responsiveness to community priorities on the one hand and a more coherent and strategic approach to local community development on the other.

Solar Park and rooftop solar power projects addresses distributional impacts associated both with vulnerability to climate risk, and potentially, the provision of cheaper, more sustainable transport systems. Additionally, supporting the use of existing rooftops, rather than forests or agricultural land, concessional finance contributes to an innovative solution to land pressures.

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10.5 Lessons Learned:

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utilities officers, developers, installers, and maintenance staff. As areas such as new energy-efficient building standards, industrial decarbonization, the rehabilitation of coal mining areas, and the repurposing of coal fired power stations develop, so too will new opportunities arise and new skills be needed. This suggests that a key component of just transitions will be to anticipate new skills requirements across entire sectors and put in place the institutions and curricula needed to support the development of existing and emerging skills needs.

10.6 Women solar cooperatives for a sustainable local economy

Source/ Reference: UCFA Morocco: Women solar cooperatives for a sustainable local economy (WECF-1)

10.7 Key characteristics

Project contributes to the energy transition and the local economy through a community-based and gender-responsive approach; with capacity building, empowerment and training as key cooperative principles, being linked to joint ownership and democratic control. Two women energy cooperatives are in development, providing capacity building for women to master solar technologies and creating quality job opportunities.

10.8 Description of low-GHG-emission strategies or policies

A value chain of productive solar technologies for agricultural food processing is emerging, based on an inclusive cooperative model with simple affordable technical solution making solar energy accessible to women and local populations. The installation and dissemination of solar cookers amongst populations of Southern Morocco, semi-arid territory, is a means of preventing deforestation of argan trees, reducing CO2 emissions, and avoiding toxic wood fire fumes.

10.9 Impact of identified strategy or policy

- Contributes to fighting deforestation, reducing CO2 emissions (5 to 10 kg of wood saved per day and per cooker.
- 600 rural women actively participate in the climate mitigation policy of their region, creating jobs that strengthen women's economic and political empowerment.
- Women's workload is significantly reduced as they spend fewer hours on firewood collection and cooking.
- The use of safe and clean solar technology has a direct impact on women's education, health, and empowerment.

10.10 Identified challenges, opportunities and stakeholder involvement

Patriarchal norms/gender stereotypes, Monopolistic/male-dominated industry. Lack of investment in rural areas, enabling legal framework, nor organisational support. Low access to renewable energy.

Energy cooperatives can play an important role in supporting national governments to achieve their climate/ energy objectives of a fossil free and socially sound transformation; contributing to public acceptance of the energy transition, enhances energy security and provides opportunities for local economic growth. Cooperative structures encourage strong commitment and reduce mistrust in authorities (national office for the development of cooperatives and local academic institutions) who are supporting activities.

10.11 Lessons Learned

A cooperative is a form of business ownership run by and for their members with the core principles of democracy, equality, equity and solidarity, which allows increased control over energy generation, keeping investments local, sending a political key message for a sustainable, just and democratic way of business. Gender-just energy cooperatives are a way to guarantee women and men an equal voice in the development of RE production. With newly acquired skills, women working in productive cooperatives get empowered through the control over the entire value chain.

11 Young women contribute to the energy transition of remote islands as trained technicians

Source/Reference: IslandEco RMI: Young women contribute to the energy transition of remote islands as trained technicians (WECF-3)

11.1 Key characteristics

This transformative and gender-sensitive project addresses the interrelated challenges of climate and gender stereotypes in STEM, considering the geographical location of the RMI, through training of young women technicians which is key in achieving holistic and durable climate impact. This simultaneously increases young women's economic independence and political participation and creates activities that have a ripple effect on the local population. Results and best practices are incorporated in national policies, further increasing the project's systemic impact.

11.2 Description of low-GHG-emission strategies or policies

IslandEco trains young women technicians to assemble, install, operate and maintain solar-powered lights, refrigerators and freezers on different Islands, thus securing decent work conditions. The project ensures a contextual approach by replacing polluting diesel generators on remote atolls where access to fossil fuels is expensive and scarce with sustainable solar equipment; helping to increase the ambitions of national climate and energy plans through lessons learnt.

11.3 Impact of identified strategy or policy

- Training, development of women's skills
- Installation of solar panels by women technicians, which increases economic independence and political participation through a spill over effect
- Benefited community members by enabling the sale of refrigerated goods
- Incorporation of results in RMI's national climate plans and electricity roadmap; raising climate ambitions whilst guaranteeing inclusive, just and long-lasting energy policies (100% of RE by 2050 with at least 20% women among trained electricians by 2030).

11.4 Identified challenges, opportunities and stakeholder involvement

Structural barriers, gender stereotypes in STEM as well as geographical isolation of the RMI. Insufficient organisational support for innovation; lack of funding for the creation of enterprises and start-ups

Women technicians can help the government achieve the target of 100% RE production by 2050. Capitalisation and scale-up of the gender-responsive climate solution, whose results inspired the National Electricity Roadmap and contributed to the National Action Plan on Climate Change.

11.5 Lessons Learned

Transformative and sustainable impacts achieved through training of women technicians, ensures decent work and increased ambition in national policies and the road towards a just transition. Context-based approach adapted to a country's specific needs ensures acceptability and also helps in the integration of best practices in policies enables the scaling-up of solar technologies whilst ensuring their inclusive use and the resilience of climate plans. Governments should not only focus on training, but also increase their efforts across the entire spectrum of actions (from the ground to the political arena), including support for innovation and increasing overall funding for climate action.

12 New Zealand's Just Transition Unit

Source/Reference: New Zealand's Just Transition Unit (Water Foundation-2)

12.1 Key characteristics

New Zealand's Just Transition Unit (JTU) was conceptualized to focus on how to manage trade and broker relations in the affected regions, after it has been announced that no other offshore oil and gas exploration permits will be issued as a result of New Zealand commitments to move towards a green economy. Encouraging transformation towards a "just, equitable and inclusive" economy (Dalziel, 2020), This unit is working to build relationships in communities that are undergoing major change.

12.2 Description of low-GHG-emission strategies or policies

The transition to a lower emission economy will be the focus of transformational work to promote change towards a "just, equitable and inclusive" economy. Taranaki just transition unit became a key priority, due to its recent policies on oil and

gas, which is working to build relationships in communities that are undergoing major transition. The unit has actively started to develop partnerships between central Government, Maori, councils, communities, workers and business to support successful transition for the region to a clean energy and low emissions future. This highlights that Partnerships are critical for a successful transition plan, as the effective and enduring relationships with stakeholders can co-create transition paths. (Douglas, 2021). The four main goals of the JTU are (i) Build an understanding of possible ways to integrate low emission measures in the economy; (ii) Identify, build and support new opportunities, new jobs, new skills, and new investments that will emerge from the transition; (iii) To better understand how change can affect different communities, regions or sectors; (iv) Make decisions about how you deal with these impacts in a fair and inclusive manner.

12.3 (d) Impact of identified strategy or policy

The transition to a lower emission economy will be the focus of transformational work. To promote change towards a "just, equitable and inclusive" economy. This unit is working to build relationships in communities that are undergoing major transition.

Taranaki is a key priority for its recent policies on oil and gas. The unit has actively started to develop partnerships between central Government, Maori, councils, communities, workers and business to support successful transition for the region to a clean energy and low emissions future. This highlights that Partnerships are critical for a successful transition plan, as the effective and enduring relationships with stakeholders can co-create transition paths.

12.4 (e) Identified challenges, opportunities and stakeholder involvement

Transition impacts affect some regions more than others. The Taranaki region, where the energy sector represents 28% of regional economic production, has been a major point of focus of the unit's co-operation; the strategy now needs to be replicated in other areas. For example, the need for just transition strategies in the primary sector is still lacking, and the government could consider the primary sector in their next transition policy. This will require in-depth research into areas and investment in local regions through focused partnerships.

There are many opportunities that can be achieved in partnership with JTU, no one area is more prominent than others and for identifying these future transformation partnerships, Government must consider if special circumstances exist in other jurisdictions that can support a collaborative / targeted collaborative approach to manage these transitions; A more integrated approach of government can bring better results to these regions by intensified efforts required by government to support the region through the transformation process and enhancing their ability to in upcoming economic development work

12.5 (f) Lessons Learned

The collaborative approach introduced by JTU is highly valued by stakeholders, but is resource intensive and requires a variety of mechanisms to operate in traditional government space. (Douglas, 2021) Hence the transformation process will require commitment and coordination in various areas of policy, education, skills development, labor market and social support institutions, that will be critical to transforming and creating new opportunities. Policy and funding in other areas, for example, regional development, green.

There is a need for further Policies and funding in areas of regional development, green investment, science, innovation, and business support can help revitalize and open up those opportunities along with Working arrangements to help plan and coordinate these work program, by working closely with the MfE in the process of transformation and long-term planning that is needed to meet the climate change goals.

13 Just transition case study – Taranaki, New Zealand

Source/Reference: Just transition case study – Taranaki, New Zealand (ITUC-1)

13.1 Key characteristics

In April 2018 the government announced an end to future permits for offshore oil and gas. Taranaki is a region in New Zealand whose prosperity has relied on oil and gas for many generations and the energy sector, directly and indirectly, employs thousands of workers in well-paying jobs. Following the announcement, the region has come together to plan its future through to 2050 and is currently rolling out action plans to achieve its shared vision.

13.2 Description of low-GHG-emission strategies or policies

The government's policy decision in April 2018 would see an end to the granting of new permits from government for offshore oil exploration in New Zealand. Onshore permit offers would continue in Taranaki for the next three years and will be reviewed following that. All existing offshore permits (57 exploration and mining permits as at April 2018) would remain unaffected, the decision relating only to new offshore permits.

13.3 Impact of identified strategy or policy

From February - April 2019 the people of the region created the content of a Taranaki 2050 Roadmap through a co-design process. Over 700 people took part in 23 workshops around the region on defined transition topics, as well as five community workshops, high school workshops and an online survey. The draft Roadmap was launched at a Prime Minister's Just Transition Summit in May 2019. After further consultation and feedback, the Roadmap and Report were finalised in July 2019. Since then, a series of 11 Transition Pathway Action Plans are designing specific initiatives to meet the vision the region has established, including both a focus on economic sectors (such as energy, food and fibre, tourism) and other social outcomes (Māori futures, wellbeing, skills).

In all of these processes, trade unions in the region are advocating for decent work to be at the core of planning for new jobs. In the People and Talent pathway action plan for example, unions have secured a proposed focus on the support and empowerment for workers during transition, including job clustering analysis of retraining opportunities and skills audits of the workforce. E tū union is further developing concrete proposals on interventions that Taranaki workers could seek to enable their transition into jobs in a lower carbon environment, and what expectations are reasonable from both government and employers, in addition to workers' own investment, and is engaging with employers and workers locally to consider the feasibility of a multi-employer redeployment scheme, initially focused on control room panel operators.

13.4 Identified challenges, opportunities and stakeholder involvement

The just transition process in Taranaki sought to be more inclusive than previous planning processes. It is overseen by 7 constituencies, each of which are on the local governance entity for the transition planning: iwi and hapū (indigenous peoples), workers and their unions, business, local government, central government, civil society and education/training.

A particular challenge has been the timeframes set external to the region (such as the Summit, and Crown budget/funding deadlines) and this time pressure has been taxing for workers and indigenous peoples in particular.

A key opportunity for the region is future of renewable energy to replace fossil fuels, and one of the transition pathway action plans discussed above focuses on this10. At the moment, the focus is on low emissions energy until a concrete plan/pathway to renewables is established.

13.5 Lessons Learned

Five key lessons stand out for trade unions involved in the Taranaki just transition:

- Change is scary because for the past century or more, economic change has meant workers, whānau (families), community have been harmed. Change disparately affects those already most vulnerable. To change this and avoid resistance, getting those who would normally be harmed to design and lead the change, is critical. This builds ownership and centres those historically disadvantaged.
- Once all the stakeholders are brought together, asking them the right questions to focus on values and the future for generations allows people to come to a far greater degree of consensus and start singing off the same song sheet together.
- Consensus is critical for investment next steps, as is leadership from iwi and hapū, and workers.
- Investment and funding are critical to enable rapid engagement, but even with funding, iwi and workers must have sufficient time to meaningfully engage.
- Future thinking at scale is key to unlock significant investment, such as large funds such as NZ Super Fund, but given scale initiatives take time, funding for short term opportunities is critical as are social safety nets.

14 Indigenous women preserve the Kilum Ijim forest, transforming lives and local economy

Source/Reference: CAMGEW Cameroon: Indigenous women preserve the Kilum Ijim forest, transforming lives and local economy (WECF-4)

14.1 Key characteristics

Women's and youth economic empowerment through entrepreneurial alternatives based on agroforestry principles allows the investment in the project to be sustainable over time. Project opens up new sources of financial autonomy and livelihood preservation, having the potential to be up-scaled and replicated. Training internally displaced girls on personal development, gender based violence mitigation, women's rights and entrepreneurship gives them the opportunity to flourish as agents of change in equal rights.

14.2 Description of low-GHG-emission strategies or policies

CAMGEW fosters a unique scheme of social entrepreneurship focused on tree nursery, bee-keeping and transformed by-products, which rely on raising women's technical knowledge and self-confidence. This model fosters women's socioeconomic empowerment and boosts the local economy, while engaging ethnic women in reforestation and organic farming, preventing soil erosion and bushfires, as well as integrating counselling services for young victims of domestic violence.

14.3 Impact of identified strategy or policy

- Gender parity in the 7 forest institutions' executive boards transforming patriarchal relations in the local communities
- 5 honey cooperatives were founded, as well as 100 MSMEs that produce beeswax, honey juice, soap and candles. Women have control over the entire value chain, while strengthening their communities' resilience
- Counselling 800 victims of domestic violence and sexual abuse on their social rights, and empowering them with business skills
- 50,000 beneficiaries of forest conservation education

14.4 Identified challenges, opportunities and stakeholder involvement

Armed conflicts and political crises in the area of implementation. Lack of funding and organisational skills for market creation. Patriarchal norms and gender stereotypes still prevail and exclusion in decision-making spaces.

ToT schemes with use of local experts can help enhancing continuous learning and sustainability of this model. Training and funding for marketing sustainable forest products support increasing local incomes. Helps to identify key opportunities for changing practices and policies.

14.5 Lessons Learned

Particularly in the rural economy, grassroots women, including indigenous and ethnic women particularly in the rural economy, are already playing an important role as workers and entrepreneurs. This scheme of social entrepreneurship promotes strong cooperation and knowledge sharing between local communities and public authorities, research institutes and foundations, ensuring continuous learning for sustainable forest and biodiversity protection. Through awareness raising, capacity building, moral and financial support, women contribute to building peaceful livelihoods for their families and their communities.

15 Just Transition for the textile sector in Bangladesh

Source/Reference: Just Transition for the textile sector in Bangladesh (ITUC-d)

15.1 Key characteristics

The garment sector is responsible for around five per cent of total global CO2 emissions and it should be included in the plans to reduce emissions in order to reach the goals of the Paris Agreement. Less than one per cent of material used to produce clothing is recycled within the clothing industry, and 13 per cent is recycled for use in other areas.

Prior to COVID-19 there was growing consumer and civil society pressure in some countries for a shift away from fast fashion towards more circular business models. Studies on or activities analysing the impact of this potential shift on workers throughout the supply chain and how to achieve a just transition, remain to be undertaken.

It seems likely, however, that any move away from the current model of fast fashion will have major impacts on jobs and on the families that depend on income from the sector.

15.2 Description of low-GHG-emission strategies or policies

In its National Determined Contribution (NDC), Bangladesh commits to reducing its emissions by 5 per cent below the business-as-usual (BAU) level by 2030, using only domestic resources. The country agreed to cut up to 15 per cent of its emissions, conditional on the availability of additional funding. Key emitting sectors are the energy, transport and industrial sectors. Under a BAU scenario, GHG emissions in Bangladesh from these sectors are projected to represent 69 per cent of total emissions by 2030 (excluding LULUCF66), an increase of 264 per cent by 2030.

Its industrial sector plan includes textile and leather, as they contribute to the 24 per cent of GHG emissions from manufacturing sub sectors. Examples of mitigation include co-generation, waste heat recovery, efficiency measures, etc., while barriers to mitigation may be a lack of expertise in implementing energy-saving measures and competing priorities for investments. That said, it still remains of greater interest to expand production than to improve energy efficiency.

15.3 Impact of identified strategy or policy

The ready-made garment sector is an important provider of formal employment in the country, in particular low-skilled, entry level jobs for young women and men, with or without education Bangladesh, together with China, the European Union and Vietnam, is among the top garment apparel-producing countries. Together they account for 73.3 per cent of the global market share. Clothing remains a dynamic product among all manufactured goods, with an increase of 3.3 per cent in relation to 2018. When it comes to importers, the EU, United States and Japan remain the world's top buyers.

Before COVID-19, the sector directly employed 4.2 million people in Bangladesh, of whom approximately 60 per cent are women. It indirectly supported as many as 40 million Bangladeshis, or about 25 per cent of the population. Some 83 per cent of the revenue that Bangladesh generated through exports was linked to the garment industry.

In 2020, Bangladesh was ranked by the ITUC among the top ten worst countries for workers. Unions face significant obstacles to union registration and exercise of other core labour rights. Estimates on trade union density in the garment sector range from 5–10 per cent. Several trade unions in factories and industries in this sector are affiliates of IndustriAll, while several retail sector trade unions are affiliates of UNI Global Union.

The Rana Plaza industrial disaster of 2013 killed at least 1,132 people and injured more than 2,500 when a garment factory in Dhaka collapsed. In the aftermath of the disaster, Bangladeshi unions, GUFs IndustriAll and UNI Global Union, and civil society organisations were able to negotiate a legally binding agreement on worker safety with different companies, to be overseen by the ILO. Nonetheless, wages in the sector remain low and social protection inadequate.

The second generation NDC to be submitted may provide an opportunity to include just transition being further supported through initiatives such as the Climate Action for Jobs Initiative (ILO).

15.4 Identified challenges, opportunities and stakeholder involvement

Before COVID-19 major changes in the garment sector and its supply chain seemed possible. Now, change in the form of brutal job losses has come in a matter of weeks. It is not clear if and when the garment industry will return to former levels of production and sales. Workers in Bangladesh have been struggling with COVID-19 impacts and consequences.

The Bangladeshi textile sector has suffered immensely from the impact of COVID-19 related lockdowns. Worldwide retail garment stores closed as part of national lockdowns. Fashion companies cancelled orders and the production of garments stopped. This has led to large-scale dismissals of workers, often without legally mandated severance or furlough pay. Many suppliers in Bangladesh have suspended work without paying workers, even for work already completed. Workers in these supply chains are among the most vulnerable and most affected by the crisis, being without savings or access to any form of social protection.

Some brands and retailers have committed to pay in full for all apparel orders already in production or completed, greatly reducing harm to suppliers and workers. Others have not made this commitment and are either cancelling all orders or imposing cancellations or rebates on a supplier-by-supplier basis. The Bangladeshi government has announced a $588 million stimulus package for the sector to pay wages. The sum, if divided by the number of workers, cover wages for one month only.

Many garment factories have reopened despite the pandemic not being under control. It is now estimated that about 200,000 garment workers are back at work and most factories do not have adequate safety measures.

Workers' conditions in the garment sectors were already deplorable. The COVID-19 crisis reinforces the extreme challenges faced when establishing fundamental rights and safeguarding working conditions. Urgent efforts are needed to ensure that this vulnerable group of workers and employees has appropriate access to decent housing, with space for quarantine and social distancing while sleeping and eating, potable water and proper sanitation facilities on and off the job, free health care, safe transport, safe work practices and income protection.

Before the COVID-19 crisis, Bangladeshi unions were focused on ensuring higher wages for garment workers and social protection. The potential for major changes to the sector based on emissions reduction was an emerging but not immediate issue. Bangladeshi unions, IndustriAll, UNI, ITUC Asia Pacific and the Just Transition Centre were considering to start a study of just transition in the sector.

COVID-19 brought disastrous change overnight. As jobs vanished due to cancelled orders and contracts, trade unions have called on the government to ensure urgent action to develop a just national economic and social recovery plan. This must ensure better industrial relations at national and sector level through a functioning National Tripartite Consultation platform and a possible national agreement between government, employers, and trade unions during the pandemic period. From the trade union perspective, a response to the COVID-19 pandemic should include access to healthcare, safety and hygiene, minimum living wage, social protection, and basic human rights.

15.5 Lessons Learned

Two key lessons learned are that social protection is critical when managing all transitions, whether related to climate change or not; and companies must ensure that workers in supply chains are paid a living wage and have access to social protection. Once the pandemic has been brought under control, it will be important to connect the realities of Bangladeshi workers to the need for a just transition that ensures that jobs and sectors are resilient to climate change, along with a shift towards low emission production. Key components of a just transition such as social protection, economic diversification, and decent jobs will be more important than ever.

Working within a Just Transition Framework could be a means of achieving a sustainable garment industry. Just transition could help ensure the involvement of workers and their representatives in social dialogue in order to define the need for investment, skills and reskilling, decent wages, and a social protection programme. The work of Bangladeshi unions with IndustriAll and UNI on the Rana Plaza Agreement could serve as a model. That process brought brands, suppliers, governments and labour to the table and resulted in a legally binding agreement that improved working conditions, including health and safety.

Ensuring effective social dialogue at the national level may be challenging, but it is essential. Components to ensure a just transition in this sector in Bangladesh need to address economic diversification through industrial strategy, collective bargaining agreements for garment workers with strong redundancy packages including pension provisions, and government or employer-paid retraining and reskilling for garment workers.

16 Sustainable urban model of solidarity economy in Bogotá suburbs

Source/Reference: Enda Columbia: Sustainable urban model of solidarity economy in Bogotá suburbs (WECF-2)

16.1 Key characteristics

Training on natural resource management, gender inequalities, masculinities, local public policies, and citizen's initiatives led the beneficiaries of this project to be empowered, exercise their democratic rights, protect their environment and cultural heritage; paving was for a sustainable and gender-responsive city through economic empowerment of women recyclers and guarantees for decent work. Funding access strengthens advocacy, entrepreneurship, and overall management capacities.

16.2 Description of low-GHG-emission strategies or policies

Enda has initiated women's civic participation through training of community leaders and developing neighbourhood committees that ensure decent work in recycling sector. Enda has contributed to destigmatize population and to recognise their right to life without violence. It involves community organisations to develop holistic urban concept, including participatory territorial planning, urban gardening, cultural activities, creation of 'Bankomunal', community savings and credit initiative for women lacking access to formal banking.

16.3 Impact of identified strategy or policy

- Women recyclers have become environmental agents and providers of a public service with equal pay. They are recognised in their role as leaders for the transformation of urban practices having social, cultural and climate benefits
- 30 tons of paper and 12 tonnes of plastic are recycled annually, saving 120,000 kwh of electricity, avoiding the deforestation of 600 trees and the accumulation of 4,000 kilos of rubbish in landfill
- spokeswomen participate in municipal decision-making processes on environment gender and local budget topics.

16.4 Identified challenges, opportunities and stakeholder involvement

Sexism, physical, sexual, and psychological aggression, as well as domestic violence are major challenges experienced; women suffers double discrimination, as women and waste pickers. Lack of funding, appropriate laws and frameworks, and organisational support.

Gender-resilient model that contributes to the national adaptation plan (NAP), circular economy policy roadmap and post-covid recovery. Integration of women recyclers and residents in urban planning bodies institutionalising the recognition of their environmental and social roles.

16.5 Lessons Learned

Solidarity economy model contributes towards the creation of sustainable and gender-responsive cities and can be unique urban approach, based on local knowledge and resources, practiced by girls, boys, adolescents, and adults, ensuring intergenerational ownership. The Training-of-Trainers (ToT) concept, whereby women are taking on leadership roles, increases their understanding and control over production and income generation alternatives; bringing a positive change in gender roles enabling women to lead the replication of the solidarity economy model, gaining more recognition within their communities.

17 Just Transition in recycling and waste picking in India

Source/Reference: Just Transition in recycling and waste picking in India (ITUC-7)

17.1 Key characteristics:

The production and disposal of solid waste is an important global climate and environmental issue. In 2016, solid waste management contributed at least five per cent to global CO2 emissions. Although the world produces more than 2 billion tonnes of solid waste every year, only a third of this is managed in an environmentally sustainable way.

17.2 Description of low-GHG-emission strategies or policies:

In its Intended Nationally Determined Contribution, India has committed to reducing the country's emissions intensity by 33 to 35 percent by 2030 in relation to 2005 levels. This is a whole-of economy commitment without commitments for particular sectors, with two exceptions. First, India will increase the share of renewable energy in its installed power generating capacity to about 40% by 2030, with the help of technology transfer and international finance. India will also develop carbon sinks through forest and tree coverage.

17.3 Impact of identified strategy or policy:

SEWA (Self-Employed Women's Association) organises informal workers, including waste pickers and has 1.8 million members, including 30,000 of Ahmedabad's 40,000 waste pickers. In 2004, the women waste picker's cooperative, organised by SEWA, negotiated a contract with the Ahmedabad Municipal Council (AMC) for collecting waste from 46,000 households. This resulted in decent livelihoods for 366 waste pickers and a door-todump solution for the recycling and reuse of solid waste. Subsequently, the AMC decided to put door-to-dump waste collection out to tender, as well as to build two incinerators. The AMC structured the tender so that workers' cooperatives were unable to compete for contracts. In 2017, SEWA mounted a legal challenge to the tender process and won a partial victory for its workers. The court ordered the AMC to require private contractors to hire waste pickers and to contract waste pickers to sort waste at collection and transit stations before private contractors transported the waste to the dump.

SEWA's initial success in Ahmedabad arose from its successful organising. It achieved high density of unionised workers and attracted effective negotiators who struck good agreements with the municipal government. After privatisation,

SEWA was partially effective in a 2017 court challenge regarding the Ahmedabad Municipal Corporation's (AMC) privatisation of waste management. Despite these victories, SEWA and its workers were unable to fight off privatisation entirely. They secured waste picking permits for a smaller group of workers post privatisation, but the AMC barred them from reclaiming their position as providers of the full range of waste management services. SEWA's waste pickers are now engaged in a struggle on two fronts: with the AMC and private waste management companies, and with other, non-organised workers who are working illegally at the dumps to pick waste.

17.4 Identified challenges, opportunities and stakeholder involvement:

India's rapidly growing cities and towns produce 62 million tonnes of municipal solid waste each year; which is expected to increase by five per cent annually as India's urban population grows and household incomes rise. Only 43 million tonnes of municipal solid waste are collected; most of this waste ends up in dumps, posing hazards to health as well as generating emissions, as opposed to being treated or recycled.

Indian informal workers and their associations Informal workers – waste pickers – play a central role in the management of solid waste in India and are responsible for the recovery and recycling of 15–20 per cent of solid waste. Globally, between 15 and 20 million workers earn their livelihoods as waste pickers and recyclers of which significant number are women.

National laws often prohibit the registration of trade unions for informal and self-employed workers, such as waste pickers. Nonetheless, waste pickers in many countries have organised themselves in informal associations and cooperatives and many are affiliated to global union federations and global networks, such as WIEGO and its Global Alliance of Waste Pickers.

The economic impacts of the lockdown have been severe. India's economy may have shrunk by 15 per cent in April, while the IMF reduced expectations for GDP growth to 1.9 per cent from 5.8 per cent. Informal workers have been particularly affected by the lockdown, as movement restrictions prevented them from leaving their homes to collect waste. Those who are still collecting waste do not have personal protective equipment.

Initially, waste pickers and their organisations achieved success in some Indian municipalities through unionisation and negotiating formal contracts for waste picking with improved wages and conditions. A more formal status for waste pickers also reduced harassment by the police and other government officials.

However, municipalities now are moving towards the privatisation of solid waste management and incineration. Tenders for solid waste management either explicitly exclude or discourage associations of waste pickers from bidding, while incineration eradicates the need for labour to sort and recycle waste. This displaces waste pickers and deprives them of their livelihoods, while providing uncertain or no benefits in terms of emissions reductions and materials reuse.

17.5 Lessons Learned:

In SEWA's view, higher-level political and legislative action is necessary to secure lasting benefits for waste pickers. They advocate for a high-level national commission to develop a national policy and plan for solid waste management, focused on waste pickers. The policy and plan should aim to maintain the livelihoods of waste pickers across India, improve their working conditions, and direct cities and municipalities to incorporate waste pickers and their organisations into urban waste management systems. Certain areas, such as door-to-door collection, should be reserved by law for traditional waste pickers.

This indicates that a key lesson for securing just transition is that although trade unions can secure just transition measures via collective bargaining or other forms of social dialogue, these victories are often partial and not necessarily permanent. Therefore, safeguarding a just transition measure may require political and legislative action. Moreover, efforts to formalise informal work should be included when working within a Just Transition Framework for this sector.

18 Just Transitions in South Africa: A Case Study by the Climate Investment Funds

Source/Reference: Just Transitions in South Africa: Case Study by Climate Investment Funds (CIF) (South Africa-1)

18.1 Key characteristics

South Africa is one of the top 15 CO2 emitters and the most unequal country in the world, with continued dependence on coal for more than 80 percent of its electricity, which has significant environmental, social, and economic costs. The cost of coal to Eskom, South Africa's state-owned electricity provider, has risen by 300 percent over the past two decades. Several episodes of rotational national power outages revealed inadequacies in the maintenance of aging coal-fired power

stations, technical issues, and management challenges. South Africa's continuous reliance on coal intensifying its water shortage and vulnerability to droughts that have been exacerbated by climate change. Though renewables offer numerous benefits, many stakeholder groups stand to lose substantially in the country's shift away from coal; which include public and private institutions, as well as vulnerable communities highly dependent on the mining sector for their livelihoods and municipal services. The rising costs and inefficiencies of coal use, an aging fleet of coal-fired power stations, and mitigation measures as those outlined in the country's Nationally Determined Contributions (NDCs) mean growing number of coal-fired power plants will continue to be decommissioned. Implementation of transition from coal to renewables is complex and can be fraught with tension as is driving concomitant decline in employment across sector led to labour protests. Successful transition to an environmentally sustainable, socially inclusive, and economically beneficial energy regime requires conscious and proactive planning, and delivery of critical strategies and investments to manage allocation of benefits and harms due to transition.

18.2 Description of low-GHG-emission strategies or policies

CIF a USD 8 billion fund created in 2008 to help finance accelerated transitions to low-carbon and climate-resilient development in low- and middle-income countries; operated as a laboratory for developing, implementing, and evaluating new approaches to climate investments, as well as learning from them. CIF programs finance clean technology, energy access, climate resilience, and sustainable forestry initiatives; operates in 72 developing countries through 6 Multilateral Development Banks (MDBs) as its implementing agencies. Though this support was not originally designed with just transitions focus, it offers helpful examples of various aspects of just transitions and can serve as basis for reflection and learning. The framework highlights the importance of considering both the distributional impacts of climate action, which includes the fair allocation of benefits and harms, and procedural elements that include the recognition of marginalized groups by including them in decision-making processes.

The two case studies covered here viz. (a) Sere Wind Farm project, and (b) Xina Solar One plant; explores key elements of just transitions in South Africa and draws lessons on how CIF investments have interacted with just transition efforts, uses an iteration of the emerging framework developed under the Just Transition Initiative — a partnership between CIF and the Center for Strategic and International Studies (CSIS) — to explore the diverse perspectives and approaches of key actors involved in South Africa's just transitions.

Sere Wind Farm project aimed to facilitate accelerated development of large-scale renewable energy capacity in support of South Africa's long-term carbon mitigation strategy; as lack of wind power's proven performance on a large scale in South Africa created perception of risk amongst potential private investors.

Whereas, *Xina Solar One plant* features innovative renewable energy technology in the form of an integrated storage system that the plant to continue distributing power for 5.5 hours after sunset. Although expensive, this storage makes it possible to dispatch energy into the grid during evening demand peak and also helps meeting energy country's demands resulting in reduced harmful emissions.

18.3 Impact of identified strategy or policy

Sere Wind Farm project: Project sought to address this barrier by catalyzing private sector investment through decreasing risk and increasing transmission capacity by connecting Independent Power Producers to the national grid. Concessional finance proved to be the key to unlocking investment and completing the early wind farm development at scale in South Africa. Eskom's final project proposal of USD243 million for wind farm was approved by CIF with the support of IBRD and AfDB in 2010 and project was fully financed with public funds from CIF, IBRD, AfDB, and Eskom who now owns and operates the Sere Wind Farm.

Xina Solar One plant: Project has supported black ownership with dividends flowing to a community trust; created local jobs; and used local suppliers for over 40 percent of project materials. CIF contributed USD41.5 million in concessional finance to support mobilization of over USD908 million through AfDB, DBSA, IDC, IFC, and South African commercial banks. Project shareholders are: Abengoa Solar SA (40 percent); Industrial Development Corporation of South Africa Limited (20 percent); Government Employees Pension Fund represented by Public Investment Corporation (20 percent); and local community trust (20 percent).

18.4 Identified challenges, opportunities and stakeholder involvement

Participatory development of key plans leads to positive outcomes related to social inclusion, participation, and governance. Overall recognition and procedural justice elements can be strengthened by extending participation and representation more broadly and deeply.

Diverse perspectives on the depth of transformation, vital for just transitions with regards to both distributional impact and systems change, require careful attention, dialogue, and potentially compromise

Expansive scope when considering distributional impacts can lead to a broad range of benefits through value chains and beyond immediate areas where development is situated

Transparent and participatory socio-economic modelling that provides foresight into long-term inclusive and sustainable development plays an important role in better informed policy and finance decisions.

Focus on cross-sectoral dialogues, along with social inclusion and participation, is vital at the local, national, and international levels of planning.

Concessional finance is critical at early stages of innovation for de-risking initial investments and demonstrating at scale the viability of emerging technologies that can help accelerate just energy transition.

Skills development is central to supporting a just transition, both in terms of reskilling existing workers and proactively developing the skills needed for innovative, and in some instances, untried sustainable technologies and processes.

By adopting a regional focus that supports repurposing and rehabilitating coal mines, economic diversification, and investments in built and ecological infrastructure, there is potential to create a flagship example of a just transition.

Just transitions require a sensitivity to context and the acknowledgement of, in some circumstances, the need for restorative justice to address past and current inequalities.

In countries with high levels of entrenched inequality, unemployment, and poverty, there is a need to better align broader transformational change, at scale and at a systemic level, with climate change responses and sectoral transitions.

18.5 Lessons Learned

Though these support interventions were not developed with just transition framework per se, it gives several lessons for supporting just transitions in South Africa:

Informed national planning for the long term: Vital part of initiating just transitions involves use of socio-economic and climate modelling to develop long-term national plans that are inclusive and transformational. In South Africa, LTMS (Long Term Mitigation Scenarios) informed the first Integrated Resources Plan (IRP) on energy. Ongoing modelling is needed to inform development and implementation of IRP and other climate-related transition policies and plans.

Inclusive cross-sectoral dialogues at all levels: Given breadth and depth of just transitions, it is vital to ensure fair and inclusive representation of all interests and perspectives through cross-sectoral dialogues taking place at local, regional, and national levels. Presidential Climate Change Coordinating Commission is a significant opportunity for providing such a platform that can sustain cross-sectoral dialogues with social inclusivity and distributional impact as key guiding principles.

Enabling role of concessional financing: Provision of concessional financing by climate finance institutions, as CIF has done in South Africa, plays a pivotal role in demonstrating feasibility of renewable energy projects by de-risking and incentivizing both public and private sector investments in renewable energy. Concessional finance, combined with other insights and opportunities listed here, has significant potential to de-risk and support South Africa's energy transition and post COVID-19 recovery that could accelerate country's transition to an inclusive green economy.

Anticipatory skills development at the national level: To ensure that South Africa equips its people with skills to support country's shift towards low-carbon, resource-efficient, and inclusive economy, anticipatory skills development is required. This necessitates a labour market intelligence system that can identify emerging skills and occupations in order to proactively plan for the development of these skills.

Adopting a broad perspective: Shift to renewable energy and other sustainable development transitions will create net employment and development benefits. However, workers and communities in particular areas will lose jobs and livelihood opportunities during these transitions. With vulnerable mining communities concentrated in specific areas, research and planning efforts should create alternative employment and livelihood options in these areas.

Built-in non-financial procurement criteria to ensure just transitions: The incorporation of non-financial criteria in competitive bidding processes can ensure that investments in new low-carbon, climate-resilient infrastructure are more closely aligned with the socio-economic and environmental needs of local communities and national development.

19 Spain's National Strategy for Just Transition of Coal-Dependent Communities

Source/Reference: Spain's National Strategy for Just Transition of Coal-Dependent Communities (Water Foundation-1)

19.1 Key characteristics

The EU's climate and energy legislation, pushed Spain to adopt decarbonization strategies, leading to the country's emission reduction. Spain has increased its levels of non-ETS emissions and has worked towards energy transition by promoting renewable energy from solar and wind power along with other measures like ecosystem restoration, afforestation, and forest fire prevention. The clean energy strategies have increased the share of renewable energy in Spain, the initiatives have substantially reduced the GHG emissions rates from the energy industries by 56.8% between the period of 2005-2019, making Spain among top leaders in solar and wind power. Apart from energy sector, Spain also has led significant efforts in transport, buildings, agriculture, and waste. Some of Spain's future strategies for more green energy include renewable hydrogen as a crucial element and has recently approved a hydrogen roadmap for the same. Spain following the EU legislation decided to terminate financial support to coal mines, this led to the shutdown of coal mines in the country as the share of the coal industry fell from 40% (1990) to 5% (2019) resulting in increased unemployment from the coal mining sector. The just transition strategy with a social angle in climate policy and the energy transition was also adopted by the European Commission in the European Green Deal with it's Just Transition Mechanism launched in January 2020.

19.2 Description of low-GHG-emission strategies or policies

Spain's national strategy focuses on the promotion of decarbonization programs, while also supporting just transition by participatory strategies to assist former coal miners in their early retirement, promoting clean energy initiatives, retraining the workforce for green jobs, and environmental restoration. To cope with the after-effects of the transitioning sectors, the government introduced the country's 'Strategy of Just Transition' which included 'just transition agreements' between the government departments, labour unions, and businesses investors in all regions that are affected by climate transitions policies. These agreements support large-scale integrated strategies to offset the negative impacts and finance green projects. The first transition deal was set in 2018 for mining communities impacted by the fallout of 10 coal pits and the loss of more than 1,000 jobs, under which government agreed to invest €250 million ($280 million) in mining communities by 2023.

19.3 Impact of identified strategy or policy

Spain's INECP (Integrated National Energy and Climate Plan 2021–2030), predicts that employment will increase in green sector by 1.7% by 2030, adding 253,000 to 348,000 jobs per year. Involvement and integration of various spheres of government and non-governmental organizations, including unions and the general public, in the formulation of the Justice Transformation Strategy and similar previous agreements. Long-term commitment to positive change. For decades, the Spanish government has taken seriously the need for a cohesive, cooperative approach to managing the coal industry and its workers, including the signing of trade union agreements since at least 1997, and reducing the time left to respond to workers' needs. A more conducive environment (except coal-dependent communities), including public support with the EU that supports the transformation of energy and vital domestic renewable energy. A transparent, time-bound process and a transparent process of developing strategies for Just Transition Strategies.

19.4 Identified challenges, opportunities and stakeholder involvement

The 2017 employment in the Spanish coal industry had already reached almost 3% of that compared to the 1990s. In affected areas, economic recovery has been underway for more than two decades with mixed results. A major challenge is to rebuild or divide coal communities, especially in the context of a decade of economic misery, in line with the effects of COVID-19. It is important to ensure a positive change for Spain's coal workers and the affected community. Given the limited social grants and high levels of unemployment and economic hardship in the country (mainly due to the effects of COVID-19), it is important to address trade and ensure that government funding for economic activities and labour development is distributed equitably.

19.5 Lessons Learned

While the focus of the strategies is coal mines, coal-fired thermal power plants will also be affected by green policies, affecting more than 2000 workers. Hence, there is a need for more initiatives and investment in new business opportunities in the same region where the communities were initially located and grants from national and international levels or initiatives from private firms should be taken and assisted by economic incentives for training, re-employment, and rehabilitation of previous workers.

20 United States Federal programs on Just Transitions

Source/Reference: The United States Federal programs on Just Transitions (Water Foundation-3)

20.1 Key characteristics

The Clean Power Plan (CPP), launched on 3 August 2015, aimed to limit emissions of power generation plants, and also created a long-term plan for the US economic divide. It aims to assist coal communities in the face of coal shortages, making state resources available (in 2015, the budget was between $ 28- $ 38 million) to support communities and districts. It was designed as a joint effort between a number of government agencies with the aim of coordinating, empowering, and identifying economic and human resource development programs and resources to assist communities affected by change in the coal and energy industry and intended to (a) diversify the economy; (b) job creation in new or existing industries; (c) attracting new investment sources that create jobs; (d) provide a variety of personnel services and skills training, including job-based learning opportunities, leading to industry-recognized; (e) assurance of high quality, much-needed jobs.

20.2 Description of low-GHG-emission strategies or policies

CPP stressed that investment in energy efficiency and renewable energy should be important means of addressing the economic impacts of coal conversion. To make this easier, US 'Environmental Protection Agency established Clean Energy Incentive Program (CEIP) alongside CPP. Particular attention is given to the need to 'build carbon-based incentives' in land sector, such as "carbon-based incentives for farmers, ranchers and forestry owners".

20.3 Impact of identified strategy or policy

CEIP provides incentives for provinces to reward early investment in wind and solar power schemes, in addition to the required energy efficiency programs, which are used in low-income communities. In this regard, the CPP recognized the need to provide transitional support to certain segments of the population.

20.4 Identified challenges, opportunities and stakeholder involvement

Young workers may not have the time to build necessary skills to transfer to other industries, and new employees can be trained in actually disappearing roles. Companies will have less time to fund pensions and repairs and try other business methods while remaining profitable. Opportunities to address existing gender and race inequalities in the energy sector will be missed. US clean-up operations appear to be following discriminatory patterns - particularly the representation of black and African American or African American workers and workers.

Business Development projects support access to finance, business installations, business space development, business technical assistance, business education, and export development.

Education and Workforce Development projects support adult education, vocational and technical education, academic achievement/ acquisition, teacher training, and staff training. Property Development projects support arts/ culture/ tourism and sector-based strategies. Community Development projects support community facilities, community infrastructure, rehabilitation, and transportation. Civic Entrepreneurship projects support community and organizational strengths. Health projects support access to care and promote health/ disease prevention.

20.5 Lessons Learned

These plans are based heavily on the assumptions that there would be a relative growth in renewable energy that will compensate for any future job losses, however these new jobs have few lucrative low skilled jobs alternative to mining jobs (Popa, 2016) but they lack job security, culture and regional influence of traditional livelihoods. The green energy jobs have been on rise in US button located infusions therefore this contributes towards spatial inequality in economic opportunity in the US.

21 Programme for Energy Efficiency in Buildings (PEEB) Cool

Source/Reference: Programme for Energy Efficiency in Buildings (PEEB) Cool (EU-1)

21.1 Key characteristics:

Program designed by the AFD in partnership with GIZ and ADEME aiming to transform the construction sector by advancing energy efficient and resilient building design, construction and operation in eligible countries; emphasizing better designs for cool buildings, will be launched in 2022 to run until 2030 at least. PEEB Cool programme supports low-carbon development strategies in the 18 participating countries outside France that have hot and Mediterranean climates without excluding colder climate in Africa (Djibouti, Ethiopia, Mali, Morocco, Nigeria, Senegal, South Africa, Tunisia), South-East Asia (Indonesia, Sri Lanka, Vietnam), South America (Argentina, Costa Rica, Ecuador, Mexico, Peru), and Eastern Europe (Albania, North Macedonia)..

21.2 Description of low-GHG-emission strategies or policies:

PEEB Cool program comprises two instruments (i) An Enabling Facility to transform the building sector towards an enabling environment for improving buildings' energy efficiency and resilience; wherein partners receive advice on public policies that expand and create markets for private sector actors and capacity development activities supporting implementation and enforcement of public policies such as building codes, standards and certification. (ii) An Investment Facility open to public and private actors offers technical assistance and financing to projects incorporating bioclimatic design principles and energy efficiency targets; a green stimulus encourages project owners to achieve more ambitious climate standards and targets in the most vulnerable economies.

21.3 Impact of identified strategy or policy:

Development impact: The total number of direct beneficiaries of the PEEB Cool programme in terms of thermal comfort, energy cost savings and improved community services was estimated at 30.3 million people over 18 countries. The number of indirect beneficiaries is 113.8 million (both numbers include 50% females). It is expected that the programme will create upward to 25,000 future-proof local jobs (direct and indirect), primarily in construction activities, hence supporting just transition within the construction sector.

21.4 Identified challenges, opportunities and stakeholder involvement:

Risk of bad implementation and in the context of the post COVID pandemic recovery, there is a risk that climate change mitigation and adaptation are side-lined as economic recovery and employment considerations are prioritized.

Strong technical assistance and capacity reinforcement components included support at identification and design phases will aim to achieve the set targets on (i) adaptation: addresses with specific solutions the vulnerabilities of buildings to a rapidly warming climate, compared to the baseline for new construction or to the existing situation for renovation, (ii) mitigation for renovation aims at 40% GHG emissions reduction or 40% energy consumption savings compared to the existing situation before renovation, and (iii) mitigation for new construction, the project aims 20% GHG emissions reduction compared to the baseline and/or 20% energy consumption savings compared to the baseline and/or 20% water consumption savings compared to the baseline (a minimum of 2 out of 3 criteria).

Technical assistance at construction and operation phase will ensure that energy efficiency measures agreed on between PEEB Cool and a project are effectively implemented at construction phase. PEEB Cool can provide technical assistance to support the actual implementation of projects such as (i) project management assistance for the implementation of measures to improve energy and environmental performance of project, including specific technical expertise; (ii) Support for verifications/certifications, (iii) capacity reinforcement to project stakeholders such as project owners, and contractors is provided if needed.

Construction firms involved in project could benefit from training in the implementation of construction methods that are adapted to the local climate context and materials; contributing to the upscaling of local actors' skills and the development of local energy efficiency related services; including capacity building on gender related topics in each project to identified staff from the project owner according to the Programme's Gender Action Plan.

Thus, promoting cool buildings brings a triple win: providing a powerful tool to stimulate investment and local jobs creation in the green economy, achieving massive long-term savings of cost and greenhouse gas (GHG) emissions, and improving resilience of the most vulnerable populations as buildings are better adapted to climate change. Energy efficiency in buildings and construction can contribute to a green recovery by promoting and supporting local employment and skills, passive construction approaches based on traditional constructive methods and usage local and low carbon materials.

21.5 Lessons Learned:

Investment should improve the socio-economic resilience of all social strata in the communities in which they take place, but particularly of low- and middle-income groups, as a result of the construction of improved low- and middle-income housing as well as public buildings providing essential services to the community, such as education and health. Though, the facilities have been designed to each address key barriers that are preventing the construction industry in the targeted countries from shifting from current unsustainable practices to a low carbon, climate resilient development path, so as to bring a paradigm shift in the sector, leading to the scaling up of the use of bioclimatic measures, efficient cooling systems and low carbon construction materials; further lessons should be learned after the effective launch of the program in 2022.

22 MaPrimeRénov' (My renovation allowance)

Source/Reference: France: MaPrimeRénov' (My renovation allowance) (EU-2)

22.1 Key characteristics

MaPrimeRénov' is mainly funded by the French recovery plan ("Plan France Relance"), launched in September 2020 in response to the COVID-19 crisis by merging two previous programs viz. the tax credit for energy transition (CITE) and the program "Habiter Mieux Agilité", is a simpler and more efficient grant wherein homeowners can use grant towards energy efficient improvements to their home.

22.2 Description of low-GHG-emission strategies or policies

MaPrimeRénov' accelerates energy-efficient building renovations, which reduces energy consumption and greenhouse gas emissions and contribute towards France's NDC and LTS.

22.3 Impact of identified strategy or policy

Energy-efficient building renovations support the construction industry and create local quality jobs. The program also has a social dimension as energy-efficient renovation of housings helps reducing low-income families' heating bills and improving the quality of their home; thereby helping improve their life chances, including the ability to pursue increased professional qualifications and apply for better jobs..

22.4 Identified challenges, opportunities and stakeholder involvement

The program involves many conditions (household income, type of housing, planned works and/or expenses, expected ecological gain) which may be difficult to understand for some households.

22.5 Lessons Learned

Previous programs were designed for tenants or people housed for free; whereas MaPrimeRénov' is targeting all property owners and co-owners, i.e. the most relevant households to target in order to accelerate energy-efficient renovations. Regarding the complexity of the program, a cross-ministry working group is currently looking at ways to make the overall system more efficient and easier to grasp for households, through simplification and improved coordination with other energy-efficiency schemes.

23 Hybrit – fossil-fuel-free steel production in Sweden

Source/Reference: Hybrit – fossil-fuel-free steel production in Sweden (EU-3)

23.1 Key characteristics

Hybrit is joint effort between the mining company LKAB, energy company Vattenfall and steel company SSAB aiming at producing fossil-fuel-free steel without the use of coking coal and thereby transforming an emission intense industry to a low-CO2-emission or CO2- emission-free production. Government to support project by ensuring streamlining of EU Emission Trading System's permit processes (steel sector is one of the industries covered by EU mandatory emissions trading), rail infrastructure and grid interconnections. The full-scale emission-free process for steel production should be completed by 2035.

23.2 Description of low-GHG-emission strategies or policies

HYBRIT aims to reduce steel industry's carbon dioxide emissions (can reduce carbon dioxide emissions in Sweden by 10 percent and in Finland by 7 percent with full-scale implementation with) by replacing coking coal (which has traditionally been used in steelmaking to convert iron ore to iron) with hydrogen produced via electrolysis using renewable electricity (mainly in the form of wind and hydropower) and water. A process called direct reduction is intended to replace the blast furnace process used today. Instead of emitting carbon dioxide, residual product is water which in turn can be reused for production of hydrogen.

23.3 Impact of identified strategy or policy

A pilot plant in Gällivare is expected to generate 1500 jobs, complemented by new production methods for iron ore generating 2000 jobs. The initiative is also expected to contribute to enhanced regional cooperation. The Swedish Government has appointed a special coordinator to facilitate the regional cooperation in Northern Sweden because of this industrial investment as well as other major investments being announced recently. The scope is to identify and accelerate the public service and infrastructure as well as skills needed and pass the information on to the government. It is expected that 100 000 (about 500 000 today) people will be moving to northern Sweden the coming decades.

23.4 Identified challenges, opportunities and stakeholder involvement

Stakeholder involvement and awareness of importance of involving inhabitants in regions concerned to avoid unnecessary conflicts.

There is opportunity to decrease emissions and develop sustainable practices for future of steel and new zeal materials, as well as transforming jobs in an emission-intense industry. The municipalities involved have welcomed the investment with open arms and facilitated the process as much as possible within their mandate. This considerable industry expansion on these scarcely populated regions will of course also mean efforts from the inhabitants today.

23.5 Lessons Learned

Hybrit collaborative project shows that a 1000-year-old production method can be transformed to face challenges that climate change poses through cooperation between companies in different sectors and with public support, seemingly impossible challenges may be conquered.

24 Philippine Green Jobs Act of 2016

Source/Reference: Philippine Green Jobs Act of 2016 (Philippines-1)

24.1 Key characteristics

Green Jobs as defined by law refers to employment that contributes to preserving or restoring the quality of the environment, be it in the agriculture, industry or services sector. Specifically, but not exclusively includes jobs that help to protect ecosystems and biodiversity, reduce energy, materials and water consumption through high efficiency strategies, decarbonize the economy, and minimize or altogether avoid generation of all forms of waste and pollution. The law has 9 salient features, as follows: (i) Affirms labour as a primary social economic force in promoting sustainable development (ii) Affirms the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature, (iii) Affirms state objectives for protection of labour, (iv) Provides for official definition of green jobs, (v) Provides for greening incentives for the business enterprises or labour demand side, (vi) Requires human resource development planning from the supply side, (vii) Mandates the establishment of a green product or technology certification system, (viii) Adopts the just transition approach by recognizing various needs of stakeholders, (ix) Adopts whole of government approach.

24.2 Description of low-GHG-emission strategies or policies

Green Jobs Content Accounting provides for three mechanisms that business can choose from to demonstrate that they are a green business enterprise: industry approach, product/service approach, and process approach. (a) Industry Approach: Firms that by the nature of its core business directly and substantially contribute to greener economy transition beyond BAU (e.g. renewable energy firms) (b) Product/Service Approach: Products/Services meeting green standards (e.g. energy start, LEED, Green Choice), (c) Process Approach: Based on activities that generate environmental benefits such as environmental impact management (e.g. rehabilitation of quarry sites). The law declares as a policy for the State

to identify needed skills, develop training programs, and train and certify workers for jobs in a range of industries that produce goods and render services for the benefit of the environment, conserve natural resources for the future generation, and ensure the sustainable development of the country and its transition into a green economy.

24.3 Impact of identified strategy or policy

The Climate Change Commission, in consultation with agencies concerned, such as the Department of Environment and Natural Resources, the Department of Trade and Industry, the Department of Labour and Employment, the Department of Agriculture, the Department of Energy, the Department of the Interior and Local Government, and the Department of Science and Technology, is mandated to develop and administer appropriate standards for the assessment and certification of green goods and services, and green technologies.

24.4 Identified challenges, opportunities and stakeholder involvement

Green jobs are also viewed as a social protection measure in the NOC to ensure safeguarding of good working conditions for the human resources at the enterprises, including Micro, Small and Medium Enterprises (MSMEs), among others.

Business enterprises that generate and sustain green jobs as certified by the Climate Change Commission, are entitled to the incentives such as (a) Special deduction from the taxable income equivalent to fifty percent (50%) of the total expenses for skills training and research development expenses which is over and above the allowable ordinary and necessary business deductions for said expenses; and, (b) Tax and duty-free importation of capital equipment: Provided, that the capital equipment is actually, directly, and exclusively used in the promoting, generating, and sustaining green jobs of qualified business enterprise.

24.5 Lessons Learned

Green jobs are decent jobs that are productive, respect the rights of workers, deliver a fair income, provide security in the workplace and social protection for families, and promote social dialogue.

25 Just Transitions in Extractives

Source/Reference: Optimizing extractives and minerals in renewable energy production (Action Aid-2)

25.1 Key characteristics

Climate emergency requires energy systems transformation, from fossil fuels to renewables as currently both fossil fuels and renewables are heavily dependent on extractive industries. Major efforts are therefore needed to protect rights of people at risk of losing out from climate transitions. The needs of workers and women in coal mining communities – who may lose their livelihoods – as well as those who may be affected by the expansion of metals and mineral extraction for the production of renewable energy, must be carefully considered. As a priority, renewable technologies must reduce their reliance on mining for new metals and minerals, by using less material in their products as well as systems to recycle metals and minerals must be dramatically scaled up, presenting potential opportunities for increased employment. However improved systems for mineral and metal recycling must also be very carefully governed by strong labour and environmental standards to protect workers' health and environment. A just transition in energy and extractives also should use renewables to improve energy access and end energy poverty

25.2 Description of low-GHG-emission strategies or policies

Improving efficiency and recycling of materials used in production of renewable energy. Understanding needs of miner communities as well as improving access to energy and addressing exploitation in metal and mineral extractive industries. Evolving and ensuring stringent mandatory social, environmental requirements for responsible sourcing of minerals.

25.3 Impact of identified strategy or policy

Locally-based renewables offers the opportunity for communities to generate their own electricity through small-scale solar and wind power technologies, without having to wait for the electricity grid which may never arrive. Energy access significantly improves opportunities for women and girls, as it can save time and labour and free up more time for education, livelihoods and ensuring food security.

25.4 Identified challenges, opportunities and stakeholder involvement

Understanding the needs of miners and their communities for workers reliant on the fossil fuel industry for employment, the shift towards renewable energy can present huge concerns that they and their communities could be left behind, stranded with few livelihood opportunities. Just transition from fossil fuels to renewables must deliver positive solutions for workers and local communities, which address the inequalities and challenges they face. A just transition process must support workers and community members – including women - to identify their needs and challenges. Addressing exploitation in the metal and mineral extractive industries shift in the energy sector away from fossil fuels has important implications for communities involved in or affected by the extraction and use of metals and minerals used in renewable energy, as those in affected mining communities may be based far away, often in different countries, from where key decisions about energy use are made. Cobalt, lithium, copper, gold, nickel, cadmium, manganese, rare earth metals and many others are used in the production of photovoltaic (PV) cells, wind turbines and batteries.

Locally-based renewables offers opportunity for communities to generate their own electricity through small-scale solar and wind power technologies, without having to wait for the electricity grid which may never arrive. Providing energy access significantly improves opportunities for women and girls, as it can save time and labour and free up more time for education, livelihoods and ensuring food security. Improving and scaling up recycling systems for metals and minerals could potentially create significant new job opportunities, and this could even be linked with just transitions for workers moving out of fossil fuel sector.

25.5 Lessons Learned

Climate policies must recognise that vulnerable mining and farming communities may already face precarious livelihoods, and may not be able to bear the burden or cost of climate transitions unless they are given support and positive incentives to do so. When shifting away from fossil fuels towards renewable energy, the transformation of energy systems must take into account the potentially harmful impacts of renewable energy's increased demand on metal and mineral extraction, and must not simply shift exploitation and land grabs to new areas. In bringing about the shift from fossil fuels to renewable energy, the renewables industry must reduce their need for new raw materials by increasing their material efficiency (i.e. reducing the amount of resources needed) and designing their products to be more easily recycled. Significant and active efforts are needed to improve and scale up sector for recycling of metals and minerals, and this must be regulated by very strong labour and environmental standards. The renewables industry must take great care to ensure the responsible sourcing of metals and minerals, including by requiring that where new mining is required, and that this is governed by strong labour and environmental standards. Ensure inclusiveness and participation with transition plans developed through inclusive participation of workers, farmers, women, communities and stakeholders, especially those that are marginalised, and taking into account the perspectives of communities and sectors that will be involved in or affected by the transition. National climate policies and plans including Nationally Determined Contributions (NDCs), and National Adaptation Plans (NAPS) should incorporate just transition processes for energy and extractives into their strategies, to accelerate shifts to renewable energy, in ways that are fair to all workers and communities and by putting social justice at the core of climate action.

Annexure 2: Concrete examples of economic diversification and transformation

1 Contrat de Transition Écologique' (CTE) - Ecological Transition Contract/Partnership)

Source/Reference: France: Contrat de Transition Écologique' (CTE) - Ecological Transition Contract/Partnership) (EU-7)

1.1 Key characteristics

Ecological transition contracts' (CTE), initiated in 2018, is partnership program between the State and local communities to help develop local projects, that diversify local economy, for sustainability and environmentally responsible development; each contract lasts 3 to 4 years.

1.2 Description of low-GHG-emission strategies or policies

This innovative approach to work with local authorities towards sustainability, CTE program, is built on co-construction principles between the State, local authorities and local socioeconomic actors; aims at working with local communities to develop concrete projects addressing environmental issues while contributing to economic diversity and socioeconomic development. The partnership is built together with socioeconomic actors in the area (public and private actors, such as elected officials, businesses and citizens) to make the most of environmental challenges in order to create economic activities and social opportunities. State services and local authorities act as facilitators in CTE.

1.3 Impact of identified strategy or policy

Territories apply on a voluntary basis to work on a CTE. The process started in 2018, experimenting with 18 territories and later expanding to 107 territories. The projects address inhabitants' daily lives and help promote the local development of various sectors, such as, for example, renewable energies, energy efficiency, mobility, agriculture, circular economy, urban planning, biodiversity conservation.

1.4 Identified challenges, opportunities and stakeholder involvement

Cooperation between local stakeholders, as well as the State's and local authorities' involvement in the process, are essential to CTE, to enable the emergence of co-built projects with experience sharing.

The core of CTE is a cross-disciplinary approach wherein projects tackle very diverse topics, from environmental issues to socio-economic challenges; enabling emergence of projects addressing several environmental or socio-economic challenges. The projects address inhabitants' daily lives and help promote the local development of various sectors, such as, for example, renewable energies, energy efficiency, mobility, agriculture, circular economy, urban planning, biodiversity conservation.

1.5 Lessons Learned

As of today, projects that are part of CTE are still being implemented; so are are assessed in view of their ambitions and expected results: greenhouse gases reduction, waste reduction, job creation, etc. in order to be included in a CTE and has to be approved beforehand based on their goals and expected impacts. A new program drawing on the positive experience and lessons learned from the CTE is being implemented as part of the French COVID-19 recovery plan, called 'Contrats de Relance et de Transition Écologique' (in English - Recovery and Ecological Transition Contracts/Partnership) and will be carried out with approximately 800 territories to support their local efforts towards sustainable and economic development.

2 Rwanda Economic Transformations by Export Diversification

Source/Reference: Rwanda Economic Transformations by Export Diversification (Water Foundation-4)

2.1 Key characteristics

Rwanda has implemented several policies to shape its economic transformation program and these policies continue to evolve depending on changing economic needs. Rwanda's development agenda is enshrined in its Vision 2020, which is to build a knowledge-based economy and become an independent private sector led economy by 2020. The Economic

Development and Poverty Reduction Strategy (EDPRS) is a mid-year framework to shape the Government's long-term development agenda based on three pillars designed to accelerate economic growth and promote development:

- *Sustainable growth for jobs and exports - investing in improving climate for business investment for achieving private-sector growth. Short term priority: reinforcing productive and export potential of agricultural sector, long term goal: diversified economy by promoting non-farm sector.*
- *Vision 2020 is pro-poor rural development and social protection program aims to eliminate extreme poverty by 2020 by releasing productive capacity of very poor. It includes public works, credit packages, and direct support implemented at village level using participatory methods*
- *Good economic governance is seen as precondition for poverty reduction and development by creating comparative advantage in 'soft infrastructure' (good governance and institutional arrangements important for private investors), thus compensating for Rwanda's relatively poorly developed hard infrastructure and disadvantaged geographical location.*

2.2 Description of low-GHG-emission strategies or policies

Economic transformation refers to process involving increase in productivity, technological capability, economic diversification, and international competitiveness that support rapid sustained and shared growth in employment and incomes of the population over time. Rwanda is taking the path of state development with a key focus on sustainable economic growth and social development. The main objective of EDPRS was to address key growth factors identified by climate analysis by systematically reducing business operating costs; investing in private sector development sector; and expanding and strengthening public sector. Government policies promoted private sector investment through good governance, legal framework, promotion of savings and the banking sector, and investment in infrastructure, health, and education including skills training. The aim is to create new job opportunities for new entrants to the labour market and the remaining workers created by modern farming practices; facilitate technology transfer; skills transfer to the Rwandan people; increased production of goods and services for export; and, it generally promotes economic growth.

2.3 Impact of identified strategy or policy

Rwanda has made significant progress in splitting its exports over time. In the 1980s, Rwanda became one of the most internationally focused hubs in Sub-Saharan Africa with significant successes including the revitalization and gradual redesign of the tea industry and the current division of agricultural products. Rwanda's efforts to prioritize international segregation seem fruitful.

The EDPRS strategy not only assisted in creating an environment conducive to business but also expanding the economy to the point where it is closer to the full reliance on agriculture so far that it is developing services and growing sectors, Export markets on the other hand, adds another dimension of export diversification.

2.4 Identified challenges, opportunities and stakeholder involvement

Despite country's achievements in last quarter of century and continued economic growth, poverty remains widespread in Rwanda remaining as government's major challenge create more jobs for people to eradicate high levels of poverty. Rwanda is one of the world's most populous countries with small land area and most of population density is in rural area engaged mostly in agriculture. The rural density and low levels of land available per agricultural worker limit the ability of land-based activities for providing job and income opportunities for a growing population.

Local entrepreneurs are still challenged when it comes to making big money and growing their business ideas into profitable businesses that will create more jobs and grow the economy. Though Rwanda is making significant progress in reducing import and export control costs, non-tariff barriers to trade-related processes and procedures remain difficult.

There is still a large gap and low-hanging fruits for regional trade between Rwanda and neighbouring countries to expand regional exports, as Rwanda still needs to generate and venture into products catering to demands of local nations. There is a need for identifying products catering to global demands for sustainable markets that help develop its global exports; which can be construction materials, specialized textiles, processed agricultural products, and other miscellaneous products. As Rwanda has resources to cater to its needs, government need to promote product knowledge and focus on exporting on regional levels.

The Special Economic Zones (SEZs) have the potential to jointly and cost effectively address the critical identified constraints; providing access to industrial land, which would otherwise be costly and time-intensive to acquire and help assist in product generation.

2.5 Lessons Learned

Rwanda has launched a vigorous effort during its reconstruction over past two decades with government working hard to maintain that growth and expand economic opportunities for all Rwandans. This strategy emphasizes importance of building multidisciplinary production and export corridor that will include service development, which will begin to transform Rwanda from a subsistence economy to a modern economy.

Through careful consideration of challenges faced by Rwanda, if it continues to maintain political and social stability and continues to prioritize investing in infrastructure and regional and international integration, Rwanda can not only sustain but also accelerate its growth and continue to be a role model for development. of countries in their region and beyond.

3 South Korea New Southern Policy (NSP)

Source/Reference: South Korea New Southern Policy (NSP) (Water Foundation-1)

3.1 Key characteristics

The Korea International Development Cooperation Agency (KOICA) has been helping countries in the Mekong region to build momentum in agricultural sector. Korea also plays a role in infrastructure development in the region, as the Mekong countries wish to strengthen ties between them. In addition, Korea supports sustainable development in the Mekong region, which protects the Mekong River from climate change and natural disasters and promotes natural resources for green growth. Korea is committed to work with the Mekong countries in conserving biodiversity, forestry, and hydromana management in the region.

3.2 Description of low-GHG-emission strategies or policies

In wake of North Korea's nuclear outrage, US-China political competition in Asia, and rising security and uncertainty in the country's economy. In 2017 President Moon Jae-in unveiled the New Southern Policy (NSP) for the Association of Southeast Asian Nations (ASEAN). The NSP has two goals, one to increase Korea's economic woes in difficult political senecio and another goal of the Korean NSP is to build solidarity between central Asian powers as a means of addressing US-China geopolitical competition.

3.3 Impact of identified strategy or policy

The NSP represents a forward-looking partnership with ASEAN and directs its focus on areas that include investment in the Fourth Industrial Revolution, sustainable development, and peace and security. Demonstrating its dual goals, the NSP focuses on the "Three Ps" of people, Prosperity, and Peace. This extends the focus of Korean-ASEAN relations from business to technological, cultural, and humanitarian cooperation, and enabled Korea to adopt a broader approach to integrating economic and social and cultural connections into a peaceful society. Going forward, the NSP relies on institutional structures to ensure that Korea's cooperation with ASEAN can support progress.

3.4 Identified challenges, opportunities and stakeholder involvement

One of the key challenges for the NSP is to clearly identify what is the policy goal and what role the Korean government should play when targeting regional level. Analysing the actual outcome of the NSP, however, is challenging. The strength of the NSP is also its weakness. Pursuing perfection and inclusiveness make it difficult to prioritize or decide on trade between cooperatives. Lack of clear priorities or framework leads to a lack of strategic planning and implementation. This poses a risk of re-implementation existing programs. Assessing the implications of NSP policy may require an assessment of two factors. The first is whether the outcome would not have happened in the absence of the NSP. Second and more important factor is whether outcome could not have been achieved without government.

Since its announcement in 2017, the NSP has produced moderate results especially in the form of expanded consultation. President Moon visited all ten countries in Southeast Asia in less than two years, which had never been done by any of his predecessors. The ASEAN-Korea Memorial Summit and the Mekong-Korea Summit held in Busan in 2019 provided an opportunity to continue the cooperation that was agreed upon at the two countries' summits. One of the most important outcomes is the expansion of Korea's resources in Southeast Asia and India.

3.5 Lessons Learned

The New Southern Policy should be followed as a strategy in the long run and can help to achieve a period of peace on the Korean Peninsula. This will require the establishment of a system that can support progress in this regard. A particular

framework must be designed and constructed with a clear commitment and established system. The government has only taken a temporary interest in a few regions, unlike Korean companies that have continued to advance in the ASEAN region with the aim of integrating with ASEAN growth, and government performance has failed to meet expectations while the private sector in the region has achieved good results. Performance indicators should be prepared to monitor the long-term progress of the New Southern Policy strategy. Only then the new Southern policy and the New Northern Policy can take on such an important role as Korea's new growth strategies, as well as the New Korean Peninsula Economic Map.

4 "The Climate Leap" initiative for local and regional climate projects

Source/Reference: "The Climate Leap" initiative for local and regional climate projects (EU-8)

4.1 Key characteristics

Sweden's government programme, called the Climate Leap running from 2015 onwards, has been introduced for supporting regional and local initiatives to reduce GHG emissions (including methane). The Swedish Environmental Protection Agency along with other central government agencies and the county administrative boards work together in the programme.

4.2 Description of low-GHG-emission strategies or policies

The Climate Leap strengthens local and regional climate efforts, for instance in a town, municipality, company, school, or county; with identified emission reduction corresponding to about 4 percent of Sweden's total emissions. The three categories of measures that provided the largest emission reductions up until May 2021 are waste measures (376993 tonnes per year), biogas production to replace fossil fuels (328 368 tonnes per year) and transport (489 713 tonnes per year).

4.3 Impact of identified strategy or policy

The Climate Leap supports the measures that provide the cost-effective emission reduction that have already diversified and transformed the implementing regions. The examples include charging stations for electric cars, biogas plants, and railway maintenance and energy efficiency projects. Positive impacts include increased battery and plastic recycling and taking care of waste heat.

4.4 Identified challenges, opportunities and stakeholder involvement

The total direct employment from 2015 to 2020, indicate that only women make up about 10 percent of those employed through the initiative; which may be due the fact of construction and civil engineering work employing more men. Following Sweden's work on gender mainstreaming, the Climate Leap will be analysed during 2022 to find out how the programme also can promote gender equality.

4.5 Lessons Learned

Transformative change needs close cooperation between private and public actors, according to economic research; which is confirmed by Sweden's large-scale projects with Green lithium batteries and fossil-free steel production. The Swedish Environmental Protection Agency have identified a few areas where development and efficiency can happen to increase the social economic benefits of the investments: cooperation for streamlining policy instruments; refine when needed (e.g. support to vehicles); Develop application for better spreading of technologies and innovation and avoiding other market failures; Spill-over effects to increase gains; authorization frameworks to increase additionality. An evaluation of the initiative found that 80 percent of the emission reductions are additional and that a majority of the measures would not have been implemented without Climate Leap programme and that emission reductions and employment opportunities go hand in hand.

5 Accelerated energy transition of India: A CIF India study

Source/Reference: Accelerated energy transition of India: A CIF India study (CIF India-1)

5.1 Key characteristics:

India is one of the fastest-growing economies in the world, with an average GDP growth rate of over 6.2 percent since 1990. Central to many of India's development plans is the accessibility to energy and its reliability. Although India's per

capita CO2 emissions are well below global averages, it is currently the third largest emitter of CO2 in the world, with sizable population segments extremely vulnerable to climate change.

After review of early success of Phase-1 of National Solar Mission Phase, GoI launched its ambitious 'Scheme for Development of Solar Parks and Ultra Mega Solar Power Projects' with a key objective of to accelerate the development of the solar capacity to reach the initial target of 20 GW, which was later revised upwards to 100 GW by 2022 of which 40GW to come from rooftop solar.

Until recently, coal was cheapest way to provide energy. The supply variability of renewable energy and the cost of energy storage to manage this variability, along with limitations in the current grid infrastructure undermining its distribution, has affected the expansion of renewable energy.

Particularly relevant aspect of India's energy transition is its geographic distribution of the energy transition; with states having high solar radiation, and thus significant solar power generation capacity are in western India, while coal-rich states are predominantly in center and eastern India.

5.2 Description of low-GHG-emission strategies or policies:

CIF and its partner MDBs contributing contributed to India's energy transition through support for cross-sectoral and multi-stakeholder dialogues that have informed energy policies and plans and through financing of renewable energy and electricity transmission projects. CIF collaborated with ADB, IBRD and key national stakeholders to develop India's Clean Technology Fund (CTF) Country Investment Plan (CIP) with support India's National Solar Mission (NSM) being its key component — an initiative to increase India's solar capacity from 17.82 megawatts in 2010 to 20 GW by 2022. In 2015, GoI increased this goal to 100 GW by 2022, with 60 GW to be sourced from solar parks and 40 GW from rooftop solar systems. CTF and MDBs provided technical assistance for capacity building programs, and concessional project finance to develop solar parks, energy transmission infrastructure, and facilitating rooftop solar power projects.

CTF and partner MDBs also unlocked significant financial support for rooftop solar energy through line of credit (LoC) through the selected national bank as implementing agencies so as to help them offer concessional loans (with reduced rate of 8.5–9.5 percent as against prevailing a rate of 10– 14 percent), depending on the credit rating of the borrower (developers, customers, aggregators, and intermediaries who qualified in terms of technical capacity, relevant experience, and creditworthiness as per the respective bank's loan scheme documents) and the risks associated with the project to enable the large-scale deployment of rooftop solar energy using different business models.

CIF initiatives to support CIP along with partner MDBs, contributed to bringing utility-scale solar tariffs to grid parity and decreased financing costs for borrowers for solar projects across India.

5.3 Impact of identified strategy or policy:

The Bhadla Solar Park, world's largest solar park with capacity of 2,245 MW spread across more than 14,000 acres in remote desert landscape, achieved levelized tariff (over 25 years) of USD 0.36 (INR2.44) per kWh, achieving record-low tariffs. CIF co-financed ADB's support to the Rajasthan Renewable Energy Corporation (RRECL) to design and plan the solar park's infrastructure. In addition, ADB worked with national transmission utility under a separate CTF project to evacuate the power from the solar parks in Bhadla to the national grid.

Bhadla Solar Park contributed to improved employment opportunities; with about 40 percent of local workforce of 1,000 come from nearby villages employed in low-skilled jobs such as security and solar panel cleaning. Additionally, some landowners were able to procure more productive land with the compensation received, thus potentially creating employment opportunities for labourers in surrounding areas.

Bhadla Solar Park also contributed to creation of income-generating activities and alternate livelihoods specifically for women: 150 women were provided vocational training on embroidery work and handicrafts. 75 women were trained in basic accounting, finance management, and negotiation skills. 415 women benefited from Micro Enterprise Development Training on Animal Husbandry (Goat Rearing).

5.4 Identified challenges, opportunities and stakeholder involvement:

Land acquisition challenges and recognition of marginalized communities.; as Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act focuses on private land, but does not address a situation where government-held land or classified as wasteland is used for informal economic activities by marginalized communities. Also common challenges in both land acquisition approaches (outright purchases and rental agreements with owners) is that workers on the land and others who may use the land are not recognized or compensated in these agreements.

Though range of alternative models, including lease agreements, community ownership models, benefit sharing (e.g., a small percentage of total revenue being paid back to the community), local economic development, and diversification, could be considered from a distributional impact perspective; still in many of these models, non-landowners will still lose opportunities to benefit from the land and will thus require attention in the transition processes.

Poor credit rating of borrowers, especially in targeted C&I /MSME sector, as well as lack of experience with regards to the financing, installation, and management of the rooftop sector, resulted in slower than envisaged growth in rooftop solar power plant installation in India.

Planning documentation Solar Park required efforts by implementing utility and the developers to integrate the approach towards inclusive growth including social and economic development of the communities/ stakeholders within the area of operation; benchmarking investments at one percent of the Detailed Project Reporting costs which in turn contributed to creation of income-generating activities and alternate livelihoods specifically for women by providing vocational training on embroidery work and handicrafts; basic accounting for finance management and negotiation skills, development of several micro enterprise development training on animal husbandry, promotion of improved maternal/ child health and safe motherhood, improved access to water and electricity with improved access to potable water and creating employment opportunities to about 40 percent of local workforce from nearby villages in low-skilled jobs such as security and solar panel cleaning.

5.5 Lessons Learned:

Clear state- and national-level policies are needed to address the interests and concerns of landowners, investors, developers, and other stakeholders who will be affected by various land lease models for promoting solar parks. Although landowners were recognized and compensated, various studies suggest that from an economic and social perspective, getting annual land rentals is preferable over an upfront payment of compensation as regular source of income.

There is need for international-, national-, and state-level stakeholders to formalize and monitor a consolidated local area development strategy that is informed by inclusive and transparent community participation to harness vast solar park opportunity.

Several implications and associated opportunities for CIF, MDBs, and other stakeholders identified by case study, to contribute to ensuring that the energy transition in India is just, are as follows:

- *Modelling*: Support complex system modelling on barriers to and drivers of energy transition to better understand and predict distributional impacts. This modelling will provide shared and informed basis for inclusive dialogues and planning while simultaneously mitigating influence of narrow vested interests.
- *Social inclusion*: Recognize and empower marginalized stakeholders by establishing local-level platforms to formally engage them and build their capacity to influence transition outcomes. The marginalization of informal labour and exclusion of land users in coal regions and renewable energy projects highlight need to proactively support social inclusion processes.
- *Partnerships*: Establish working relations and capacity-building processes within and across national and state government departments for just transitions. A programmatic approach, promoting cross-sectoral dialogues and governmental collaborations, creates opportunities for relevant energy projects to support just transitions at multiple scales.
- *Regional planning*: Priority geographical areas need to be identified and plans developed, based on the relative impact of barriers and drivers related to coal transitions. Disproportionate impact of transition on 5–6 coal-dependent states highlight value of and need for conducting focused vulnerability assessments and development planning, especially for regions at immediate risk.
- *Economic diversification*: Develop detailed economic transition plans that include priority activities, timelines, and budgets through collaborative, informed, and empowered stakeholder engagement. Transition plans need to include anticipatory skills planning, the repurposing of mines and power plants, rehabilitation of mines and local environments, along with planning of economic diversification in previous coal-dominated areas.
- *Finance*: Develop budgets, including funding requirements, for transition. This needs to target not only clean energy projects, but also support for regions that will be affected by phase-out of coal.
- *Safeguards*: Establish institutional frameworks, along with environmental and social safeguards, needed to support implementation, monitoring, and learning related to just transitions. Current social and environmental safeguards

provide project-level mechanisms for managing risk. Additional institutions and frameworks will need to be developed to build the capacity required for supporting just transition outcomes at the state and national levels.

- *Scale*: Identify and mobilize state, national, and international institutions to support and scale just transitions and broader transformational change. CIF and partner MDBs, as well as broader climate finance institutions, are well-positioned to support and learn from transition processes globally. They could, in turn, mobilize this learning to support just transitions through country engagements and project finance

6 Transformation of the Indonesian Power Sector

Source/Reference: Transformation of the Indonesian Power Sector (Indonesia-2)

6.1 Key characteristics

The energy sector is currently the second-largest contributor to GHG emissions in Indonesia, below the forestry sector; and within projected to become largest GHG emitter. Indonesia being developing countries still depends on coal for power energy and the government yet to ensure all people access to the electricity. Indonesia has ambition to reduce GHG emission by achieving the peaking all mitigation sectors in 2030 and explore opportunities from international supports especially in finance and technology transfers to rapidly progress towards net zero emission by 2060 or sooner. The utility or national electricity company supports target by carrying efforts to increasing renewable energy capacity through its green transformation program and carbon neutrality aspiration.

6.2 Description of low-GHG-emission strategies or policies

The Power Development Plan (RUPTL 2019-2028), the utility aims to achieve the 23% renewables mix by 2025; while the updated PDP (Draft RUPTL 2021-2030) integrates a higher (48% as against original plan of 30%) proportion of renewable energy than that stipulated. Indonesia plan to achieve the target by increasing renewable power plants and retiring some diesel power plants. The utilization of biofuel in diesel power plants and biomass in coal power plants will also be executed as short-term policies. As for the medium- term policy, the lower carbon technologies such as supercritical boilers for upcoming coal power plants will be established. Indonesia through it's state own enterprise will start retiring coal power plants in 2026 while continue scaling up the renewable energy plants.

6.3 Impact of identified strategy or policy

As a step lo carbon neutral by 2060, 24 small-scale renewable energy plants began operating commercially in 2020, with a total capacity of 154 37 MW. The operation of those renewable power plants reduces GHG emissions by around 730,500 tons of CO2 annually, meanwhile, the government of Indonesia also needs strategy how to keep the electricity rate is affordable for all people.

Climate change has driven market-based instruments which help the achievement of climate mitigation goal. The electricity company utilized carbon pricing as a measure to mitigate climate change. Up until 2020, it has obtained 8.2 million tons of CO2e GHG emission reduction certificates from Clean Development Mechanism (CDM) program and Verified Carbon Standard (VCS). The GHG reduction from three VCS projects (Musi, Renun, and Sipansihaporas hydropower plants) is more than 1 million CO2e per year. lt means Indonesia still need financial support and technology transfers to adjust the progress.

6.4 Identified challenges, opportunities and stakeholder involvement

The government of Indonesia must ensure the safety and reliability of the power supply, transition to low-carbon electricity while keeping electricity at an affordable price. This is a major challenge since the least-cost yet emission-intensive coal power plants are still being the backbone of Indonesia’s electricity system. Therefore, the capital cost of renewable energy and other low carbon technologies as well as intermittent characteristics of VRE, which entails additional storage technologies, adds a dilemma which the company has to sell the electricity at an affordable price with an average of USD 0.08/kWh. The decarbonization plan requires support from multi-stakeholders, for example through the state investment, the adjustment of electricity tariff based on customers' economy level, as well as the subsidy and compensation that considering the foreseeable allowed cost. The electricity company needs to continue to make more efforts to buy renewable-powered electricity at competitive prices by increasing the competence of its procurement through collaboration with international financial institutions to ensure the most economical renewable energy cost structure.

The new market mechanism that would be agreed by UNFCCC parties might provide broader opportunities for Indonesia to add financing for renewable energy. Furthermore, global companies have pledged carbon neutrality, which requires

carbon credits for offsetting their carbon footprint. Meanwhile, the domestic market is also emerging. The national emission trading system that was released in March 2021 creates domestic carbon market. Therefore, Indonesia can extend carbon offset service to broader markets, including domestic markets.

6.5 Lessons Learned

Concerning the complexity of the power sector challenges, the government of Indonesia needs to encourage the participation of the private sector and investors both national and international as well as collaborating with various parties to developing environmentally friendly technology in the power sector. Irrefutably, Indonesia, especially in power sector faces some challenges in achieving the GHG reduction target needing support from multi-stakeholders to overcome those challenges and to address the three pillars of the energy trilemma: affordability, security, and environmental sustainability.

7 Just transition case study – Smart Meters, UK

Source/Reference: Just transition case study – Smart Meters, UK (ITUC-9)

7.1 Key characteristics

The Government sees that carbon emissions from homes and businesses are continuing to rise, there will be a squeeze on generational capacity as coal fired power stations are taken out of service and they identify in a survey that the average customer doesn't know which devices require the most energy nor do they know on a day-to-day basis how much they are using. Every home and business has a meter to measure the power and gas consumption but these are either outside the property or hidden away in some cupboard or high up on a wall.

The suppliers already increase the cost of energy when it is in high demand and lower it when the demand is lower hopefully reducing peak demand but other than the development of electrical storage central heating which switches on at night and off during the day very little done domestically. High level energy use customers are offered an agreement where they can receive cheaper energy supplies than normal per unit as long as they are willing to have their supply cut in the event of a high national demand for power.

Nonetheless the government can see a time in the not-too-distant future where there could be a series of disruptions to the supply as demand outstrips capacity. With the need to move away from petrol and diesel to electrified transport solutions the demand for electricity will increase dramatically too.

With the advent of mobile digital technology, it becomes possible to collect the data from these devices remotely and provide feedback to the customer of the use. So the government tells the energy industry providers that they need to supply and fit smart meters throughout every business and private property in the country. It is hoped that this will cause customers to change their energy use habits and a big advertising campaign is started to encourage customers to switch over to a smart meter.

7.2 Description of low-GHG-emission strategies or policies

UK government consulted on the prospect of rolling out smart meters in 2015 and later in January 2016 the regulator proposed the rollout of smart meters and the Government set a deadline for all the meters to be replaced by December 2020. The trade unions engaged with the energy retail companies and the regulator to find a solution for the energy meter readers that would lose their job when smart meters were installed. The proposal was to turn them into smart meter installers.

The actors in the discussions were the big six energy retail companies (British Gas, EDF Energy, E.ON UK, npower now owned by E.ON, Scottish Power and SSE), the government regulator Ofgem, several agencies that provided meter readers such as Workforce, Morrisons, Blue Arrow and the four main trade unions GMB, Prospect, Unison and Unite. The four trade unions presented jointly their just transition demands, as agreed by the energy workers.

7.3 Impact of identified strategy or policy

As the gas and electricity supply meters are not currently capable of reporting back to the supplier the device needs to be checked manually by someone visiting the property and reading back the amounts used. As a result, there is a large team that needs to visit properties and collect this information before reporting it back to base. This is not a very skill intensive role and hence does not attract a large salary.

The fitting of a gas and electricity meter requires the engineer to obtain and maintain their manual skills qualifications and be aware of electrical and gas safety. As a result the engineer needs to undertake a short apprenticeship to learn how

to weld pipes together to form a seal, how to wire up an electrical meter so that there are no cross polarity issues, especially on a three phase supply. As the membership of the EU required the wiring codes to change from the old UK red, black and green colour coding standards on a domestic supply to brown, blue and green/yellow for live, neutral and earthed safety and to other coding dependant on the supply type the installer also needed to know and memorise the various colour coding differences and know what each meant.

It takes around 90 minutes to safely fit and connect the smart meters to the supplies and connect them electronically via a mobile phone network to the head office to link the readings to the customer's account. Therefore, at most assuming everything goes to plan and the driving distance between customers is not extensive, it is just possible to fit four meters a day. With 29 million homes and 6 million businesses, some with more than one office or commercial space with this number growing rapidly. Therefore, the size of the engineering team would need to be very large if they were to replace all the meters in a short period of time.

The UK unions met with employers and negotiated that the smart meter readers (who on occasion were not working for the energy supply company's but on an outsourced provider) could be transferred in as the need for meter readers diminished. The readers would then undergo an intense in-house course to learn how to work safely with electrical supplies and fit electrical meters before progressing on to the skills needed to fit a gas meter including bending and welding of pipes to form a gas tight seal. This training included how to identify asbestos and other hazards and what the company policy was with respect to dealing with these issues. Once the new apprentice was allowed out of the classroom they were then mentored by an experienced engineer who checked and guided them through at least six months of on the job one to one training where they would continue to perfect their skills.

Some engineers were also provided with the safety equipment and training with respect to the safe removal of asbestos whilst others companies simply told engineers to walk away if they discovered a sheet of asbestos or other technical problem with the supply or property wiring until a suitably qualified engineering specialist could be brought in.

7.4 Identified challenges, opportunities and stakeholder involvement

Currently the existing meters were often installed when the buildings were built or were eventually wired for power. As a result the workforce to install or maintain meters is very limited and not large enough to swop out the existing meters to measure the gas and electricity supply. Some older meters are mounted on asbestos backing plates so disturbing them will cause a major health and safety issue.

Some industrial properties have not had their wiring checked for safety standards in decades so changing the meters may require the building to be rewired. This rewiring can include the instillation of a switch between the main supply and the meter, in the property so that the property can be isolated from the supply when the meter is being worked on.

7.5 Lessons Learned

The UK network has been privatised so the government cannot simply settle on one design and employ government contractors to move systematically from house to house, business to business and street to street to have meters installed as each property may have a separately agreed contract with its supplier company. As the UK conservative government believes that businesses can find their own commercial contracts with suppliers of smart meters and that they should not interfere with these commercial arrangements they decide to leave the technical side to the supply companies.

Also was realised by the series of customer complaints that instead of a single solution each individual supplier has addressed the issue in their own separate way meaning that every time a customer swopped the billing company to obtain a more competitive price for the supply of that fuel, the new supplier would need to change their smart meter over again so that it could supply them with the data they needed in a format which was compatible with their computer system. The government then passed legislation to ensure that standardised the format of the data produced, so that it could be accessed by any provider in the future. This often meant replacing meters that had already been fitted.

It was also discovered that a number of the meters were not up to standard and therefore gave inaccurate readings as the energy companies had used a supplier who could provide them at the lowest cost with very wide-ranging levels of accuracy.

Eventually the demand for such a large team of engineers will diminish once the majority of property meters are replaced. At this time, it is hoped, the engineers will be retrained to replace natural gas central heating with electrical or solutions that can burn hydrogen. Or will be retrained to work on the need to update the electrical supply network so that it can meet the demands of future and current customers to recharge electrical vehicles and power replacement heating systems.

8 Community-owned and gender-just agroecological system

Source/Reference: Community-owned and gender-just agroecological system (WECF-5)

8.1 Key characteristics

Sustainable agriculture practices, adoption of solar home systems and tree planting are the main interventions promoted by GLM to reduce the vulnerability of rural women farmers to the negative impacts of droughts and floods. These strategies enhance food and nutrition security, the reduction of GHG and reduce women's workload related to fetching wood. The project approach emphasises working with community structures to ensure community mobilisation and sustainability of the interventions; while guidance from the tradition leaders ensures that practices are adhered to in their culture.

8.2 Description of low-GHG-emission strategies or policies

A climate-resilient model promoted in rural areas by implementing gender responsive agroecological systems and solar technologies and based on their success, GLM is advocating for the integration of agroecological strategies in Zambia's national agricultural and climate adaptation policy. With new strategic partnerships with the government and the private sector for the adoption of solar stoves, GLM has helped to prevent deforestation and reduce women's burden of domestic work.

8.3 Impact of identified strategy or policy

The project empowers women by involving them in decision-making processes on access and management of natural resources, safeguarding their right to food, rural employment, a safe environment, and climate justice. Around 25 women leaders have been elected as treasurers in development committees, positions traditionally occupied by men and around 50 households adopted solar stoves for cooking, lighting their homes and charging small appliances. The project is working with 5000 rural community members that are within the project areas.

8.4 Identified challenges, opportunities and stakeholder involvement

Policies do not support agroecology principles, whereas lack of inclusive land rights that prioritise rural women and youth instead of corporate land grabbing.

Agroecology provides an alternative to mitigate and adapt to climate change and support the achievement of Zambia's Vision 2030. According to the 7th National Development Plan, Zambia aims to become a prosperous middle-income country through greener development pathways.

8.5 Lessons Learned

Agroecology and the use of solar technologies provide an alternative to climate change mitigation and adaptation. Integrating gender and a community approach at all stages of the planning and implementation process is key. This includes (i) increasing women's participation in project committees to ensure decision-making, implementation, monitoring and evaluation, and (ii) ensuring mitigation/adaptation measures build on the strengths of women and men in a way that their skills, knowledge, and capacities are used adequately. Diversified livelihoods and farming activities make rural women less vulnerable to potential disasters and strengthen their food security.

9 Economic transformation through woman empowerment through skill development YAKKUM Indonesia

Source/Reference: Women's groups: structured response to disaster risk in mountain, landslide-prone areas (WECF-6)

9.1 Key characteristics

The YEU project provides a model of climate resilience, gender responsive community-based action; empowering women's groups to identify and implement adaptation strategies, namely aquaponic systems, within their communities. This opens up a range of new economic activities for women, contributing to the diversification of their activities and thus to greater resilience. Women groups increasingly contribute to local and national policies (disaster risk management and water-food supply). Aquaponics models also improve communities' food sovereignty, climate and Covid resilience.

9.2 Description of low-GHG-emission strategies or policies

Context-based adaptation project that tackles the threats of landslide, droughts and groundwater scarcity caused by massive deforestation. Development of more efficient and sustainable water management systems that reduce the risk of climate-related disasters. Rehabilitation of traditional knowledge to ensure drinking water supply and restore mountain agriculture. Re-planting of young trees to prevent landslides. Improvement of waste recycling, reduction of waste produced.

9.3 Impact of identified strategy or policy

Empowerment of women through their participation in the establishment and operation of aquaponics systems, thereby strengthening their involvement in water management and decision-making processes at local and national levels. Sale of both aquaponic and waste recycling products guarantees gender-just income generating activities, thus improving women's livelihoods and economic independence. Aquaponics farming benefitting local communities by increasing food security with a wider nutritional scope.

9.4 Identified challenges, opportunities and stakeholder involvement

Lack of recognition of women's skills and leadership. Lack of funding and organisational skills for market creation.

Aquaponics farming can help adapt to climate change. Economic empowerment leads to rise in female political engagement on a variety of topics, including the fight against gender-based violence or COVID-19 national response. Strengthening of women's advocacy on local and national policies on climate disaster (e.g., establishment of gender-responsive emergency preparedness programme.

9.5 Lessons Learned

Aquaponics farming provides an opportunity to adapt to climate change, ensures gender-just economic and political participation and increases local food sovereignty. Economic and political empowerment of women increases their participation in climate and gender advocacy, leading to improved national laws. The participatory approach (identification of community capacities and vulnerability, functioning of aquaponics systems and distribution of the harvest) increases the acceptability and relevance of the strategies developed. Trainers ensure the replicability of the associative structure.

10 The offshore wind evolution of the city of Esbjerg

Source/Reference: Denmark: The offshore wind evolution of the city of Esbjerg (EU-9)

10.1 Key characteristics

Esbjerg municipality in the Region of Southern Denmark on the west coast of Jutland, historically an import-export and fishing port, underwent its first fundamental transformation during the 1970s with the emergence of the Danish Oil and Gas sector in the North Sea playing an instrumental role in servicing the Danish offshore oil and gas sector over past three decades. However, with the decrease over the years of revenues from this sector, culminating this year with the political decision to end Danish oil and gas production by 2050, Esbjerg has been transformed into one of Europe's leading hubs for offshore wind and a vital economic lifeline for the entire municipality.

10.2 Description of low-GHG-emission strategies or policies

The Danish Climate Act (from 2019) states that Denmark must reduce its GHG-emissions with 70% in 2030 compared to the levels of emissions in 1990 and achieve a climate-neutral society in 2050. Furthermore, in 2020 the Danish government and a majority of political parties agreed on the North Sea Agreement, which states that the extraction and production of oil and gas must end by 2050; thus is an important step towards living up to the 70% GHG-reduction goal in 2030 and climate-neutrality in 2050. In 2019, Denmark covered around half of the electrical power consumption with green energy from wind and sun and has numerous offshore windfarms (with a capacity of 1699 MW) and numerous current offshore windfarms projects in the pipeline. The energy islands will warrant that Denmark in future can ensure that all Danish households and companies' power consumption is covered by green energy; and can also be exported to neighbouring countries contributing to the green transition in Europe. The closure of Danish oil and gas production in 2050 supports NDC and Danish LTS, as it will lead to a 9-15% decrease towards 2050 and the subsequent burning of oil and gas is

avoided. In 2020, the government agreed on a sector-specific climate agreement concerning the energy and heavy industry sector.

10.3 Impact of identified strategy or policy

Offshore wind today accounts for about 25% of revenue in Port of Esbjerg, involving more than 250 companies. In addition to having one of the most advanced local supply chains for offshore wind, Esbjerg also has substantial service and hospitality sector (restaurants, hotels etc), which indirectly benefit from and offers support to offshore wind sector.

10.4 Identified challenges, opportunities and stakeholder involvement

The current impacts from offshore wind in Esbjerg cannot be attributed to the installation and/or service of a single offshore wind project alone. Rather, it is the result of continuous efforts made by the Port of Esbjerg and the local ecosystem of offshore wind suppliers over the past two decades. Port of Esbjerg's first encounter with the offshore wind sector came with the first large-scale Danish offshore wind farm, Horns Rev 1, in 2001, which was since followed by Horns Rev 2 and 3, all of which were installed out of Port of Esbjerg, which also serves as the current Operations and Maintenance port for all three farms. Encouraged by the first Danish offshore wind commitments and the promise of more to come, the Port of Esbjerg initiated a year-long port expansion project during the installation of Horns Rev 1 in 2001 – a transformation process which took several years. These experiences gained from some of the world's first offshore wind farms became instrumental in launching the second fundamental transformation of Port of Esbjerg towards a leading installation- and service hub for offshore windfarms in Europe. Between 2001-2018, Port of Esbjerg has successfully converted its experiences from the first Danish offshore wind farms into capturing more than 55% of accumulated offshore wind capacity in Europe.

Furthermore, as part of political decision to end oil and gas production by 2050, it was agreed to procure recommendations on how to best invest in local workforces in order to ensure growth and employment in offshore wind sector for whole region. R recommendations published in May 2021, emphasizes need for focussing on development of green technologies that linkages different sectors, e.g. renewable energy and PtX, that workers from oil and gas industry is re-educated and/or upskilled. Following recommendations, government supporting Esbjerg port in its development and its adaptability to become green hub for offshore wind.

10.5 Lessons Learned

Esbjerg's transformation is an example of successful adaptability of an oil and gas industry transforming into a green energy metropolis. The transformation also shows the importance of re-education and upskilling of current employees in a green and just transition to avoid large numbers of unemployment and economic stagnation. The adaptability of Esbjerg in its transformation can serve as an example to other countries and regions in the world, where green transition entails new requirements for the working force.

11 Odense Port (Danish: Odense havn) – from shipyard to pioneering green industrial Park

Source/Reference: Odense Port (Danish: Odense havn) – from shipyard to pioneering green industrial Park (EU-5)

11.1 Key characteristics

Odense Steel Shipyard (Danish: Odense Staalskibsværft) was Danish shipyard company located in Odense/Lindø was best known for building container ships for its parent group, A.P. Moller – Maersk Group, including Mærsk E class in 2006, which at time were biggest container ships in world. Global financial crisis led to Maersk announcing its closure in 2009 with last new ship delivery in January 2012. After closure of yard in 2012 (later sold to Odense Municipality), shipyard has been transformed in to an industrial park housing around 100 different companies within energy, maritime and offshore wind sector (e.g. Fayard, Siemens, Vestas and Bladt Industries). Most companies work with production, storage, testing and discharge of large components for offshore and heavy industries. The area of more than 1,000,000 square meters (11,000,000 sq ft), of which 166,000 square meters (1,790,000 sq ft) is under roof, combined with the gantry crane and the harbour area makes it ideal for handling heavy industry associated with the renewable energy sector.

11.2 Description of low-GHG-emission strategies or policies

Following Danish Climate Act in 2019, which set the goals of a 70% GHG-reductions in 2030 compared to the levels of emissions in 1990 and for Denmark to achieve a climate-neutral society in 2050, Danish Ports (Danish: Danske Havne),

industry organisation for Denmark's business ports, created a strategy for a green transition for Danish ports. The strategy's vision is linked to the 17 UN SDGs, with special focus on four SDGs (7, 9, 12, and 14) as the primary focus, as they represent the areas of action where the ports can contribute the most and where they can make an additional effort. In addition, Danish ports have, as the first in Europe, committed themselves as an industry to work with concrete goals for a green transition in ports which include: Danish ports becoming emission free in 2030, ports ensuring circular economy (aim is 90 % of waste produced in Danish ports are reused in 2030), and having a "green dialogue" with clients to ensure green behaviour.

11.3 Impact of identified strategy or policy

Some 3000 workers were laid off with shipyard closure during 2009-12, re-education of workers supported by the European Globalisation Adjustment Fund for Displaced Workers. In addition, in the immediate aftermath of the decision in 2009 a public-private partnership, Lindø Offshore Renewables Centre (LORC), was established as a non-profit to transform the large industrial site into a test center and industrial park, housing a number of companies working within that sphere, for the wind and renewable energy industry. Today, LORC's objective is to promote innovation in the offshore renewable energy sector contributing to the lowering of the Levelized Cost of Energy and make renewable energy viable offshore. Around 2500 people are employed in one of the 100 companies operating on the Lindø site, with an additional 3000 employed in local industry and hospitality servicing the site.

11.4 Identified challenges, opportunities and stakeholder involvement

It was a devastating blow for the community in Odense/Lindø when the closure of the shipyard was decided. Many said that the closure of the shipyard was the end of the heavy industry in Denmark and thousands of workers would lose their jobs. However, following the Lindoe Offshore Renewables Centre was established as a public-private partnership between Danish companies in the energy sector and Danish universities. In addition, the re-education of former shipyard workers was supported by the European Globalisation Adjustment Fund for Displaced Workers.

In 2014, the shipyard was sold to Odense Port (owned by Odense Municipality), which continued the development of the shipyard. Importantly for AP Møller – Mærsk was finding a buyer who had the same visions and interests as the company; creating life in the area and employment. According to A.P Møller Maersk CEO, Lars-Erik Brenøe, the transformation of Odense port became a success because many different stakeholders came together.

11.5 Lessons Learned

Lindø industry park/Odense Port is an example of successful transformation from an international shipyard to thriving hub in the energy, offshore wind and maritime sectors. The transformation of Odense port in just seven years shows importance of public-private partnerships as well as re-education and upskilling of workers in a green and just transition to avoid a community losing their livelihood and ensuring that they become a part of the green transition.

12 Northvolt green battery factory in Sweden

Source/Reference: Sweden: Northvolt green battery factory in Sweden (EU-4)

12.1 Key characteristics

Around Northvolt's factory in northern small town of Skellefteå, competence and infrastructure regarding battery cells, sustainability and modern industrialization are emerging. Northvolt's presence in Skellefteå also attracts its subcontractors to move some of their business there. The factory will long-term result in 10,000 new jobs including subcontractors, and a multiplication of its technology industry. Out of many places in Sweden, Skellefteå was found to have the best preconditions with sustainable and cheap energy production as well as functioning infrastructure with a harbour and railroad. The town also had the capacity to increase its building of houses, school and other infrastructure needed.

12.2 Description of low-GHG-emission strategies or policies

Northvolt's mission is to build the greenest battery in the world with a minimal carbon footprint and the highest ambitions for recycling to enable the European transition to renewable energy Manufacturing with clean energy, our mission is to deliver batteries with an 80% lower carbon footprint compared to those made using coal energy. Northvolt has ambitious plans for building green lithium-ion batteries to enable the European transition to a clean, carbon-neutral energy future. The batteries will be used in different vehicles and in applications to store energy.

12.3 Impact of identified strategy or policy

Northvolt intends to set a new benchmark for sustainable manufacturing, not only of batteries but for manufacturing at large

12.4 Identified challenges, opportunities and stakeholder involvement

Unemployment in Skellefteå is low, hence attracting people from other towns, regions and even countries is important given the competences needed.

Northvolt intends to set a new benchmark for sustainable manufacturing, not only of batteries but for manufacturing at large. Opportunities regarding 10,000 new jobs and changing the way battery production is done - building green lithium-ion batteries. A number of educational initiatives are created to support the establishment of the battery production and competence provisions. For example, adult education in the locality, RISE Research Institutes of Sweden, European Institute of Innovation and Technology (EIT) and Luleå University of Technology.

12.5 Lessons Learned

Northvolt is a great example that the transition towards a fossil free society simultaneously can create economic growth and job opportunities. The rapid development of new industries such as Northvolt reshapes the Swedish pattern of energy usage. There will therefor need to be a regulatory framework and infrastructure in place, as well as engagement from relevant actors to enable this development.

13 Sustainable Low Emissions Island Mobility Project (SLIM)

Source/Reference: Sustainable Low Emissions Island Mobility Project (SLIM) (Antigua and Barbuda-1)

13.1 Key characteristics

Promoting green transport through promotion of Electric Mobility, capacity building through recycling training, emergency response training, enabling framework for the transition through electric vehicle pilot, and funding window (Electric Taxis).

13.2 Description of low-GHG-emission strategies or policies

Antigua and Barbuda NDCs Goal of net zero by 2040 with target of 100% Electric Vehicle by 2040.

13.3 Impact of identified strategy or policy

Project is in its infancy stages, so awaiting results.

13.4 Identified challenges, opportunities and stakeholder involvement

Presently only one car dealership supplies EVs. Banks and Insurance companies charging higher rate for EVs. A major challenge is the current availability of charging stations.

Bus and Taxi Associations were engaged since project development with continued stakeholder engagement are directly involved in project to test electric taxis and buses. Car dealerships were also engaged since development as well and continued consultation expected in future for their inclusion as goal is that existing dealerships will eventually supply EVs in future. Training students at technical schools in mechanics of EVs. Project created opportunity for dealerships in training staff on maintenance services of EVs also potential to create opportunity for dealership to be part of transition by beginning to lease EVs as higher rate for EVs is being charged presently by banks and insurance companies. Creates business opportunities for West Indies Oil Company (WIOC), supermarkets, plazas, bars, workplaces for charging stations.

13.5 Lessons Learned

Insurance companies must be included which were not included in project development. The project scope needed to be expanded from taxi and buses to rental car companies because opportunities exist there as well.

14 Accelerated Examination Programs (AEPs) for patents available in multiple countries

Source/Reference: Accelerated Examination Programs (AEPs) for patents available in multiple countries (AIPPI-2)

14.1 Key characteristics

AEPs for green technology patent applications seek to expedite the processing of green tech patent applications and are used by various Patent Offices worldwide as the sense of urgency to address climate change impacts and related environmental problems that green tech addresses, and publication and dissemination of green technology knowledge worldwide. The accelerated process incentivizes investment in such technology, because patent applications and approvals are often essential criteria to secure investment and approval for technology-related projects within larger organizations (e.g., larger companies and/or government-related entities), as well as in funding for start-ups and other small and medium sized enterprises. AEP helps to support a just and equitable distribution of economic opportunities—as patents foster growth and commercial opportunities for SMEs to compete with larger companies and organizations. There is evident clear connection between new technologies on one hand, and creation-expansion of job opportunities in new markets, for new products, services, and energy sources, on other.

14.2 Description of low-GHG-emission strategies or policies

AEPs and other related "green patent" programs considered by SCGT includes those identified in various countries/jurisdictions: Australia, Brazil, Canada, China, India, Israel, Japan, Korea, Taiwan, UK, USA. Additionally, as part of the Cooperative Patent Classification (CPC), EU countries have access to the European Patent Office (EPO), who has introduced a new patent search class that covers selected technologies that control, reduce, or prevent anthropogenic emissions of greenhouse gases [GHG], as also technologies that enable adaptation to the adverse effects of climate change.

Though most national Patent Office AEPs apply to a broader description of "green technology," and/or inventions that enhance "environmental sustainability" or mitigate environmental degradation, good portion of national AEPs do specifically cite reduction of GHG or carbon emissions among criteria that qualify inventions as "green" and thus able to benefit from the program. Similarly, qualifying criteria under most countries' AEPs do not limit qualifying inventions to those directly related to climate change impacts or goal to lower GHG emissions (e.g. waste-water treatment technology and other solutions addressing forms of pollution), substantial representation of green tech inventions qualifying for AEP status do either directly lower GHG emissions and/or they provide alternative sources of energy or other inputs or measures to achieve such a strategy.

14.3 Impact of identified strategy or policy

AEPs and similar green tech policy instruments has the ability of to distribute economic opportunity to small and medium-sized enterprises (SMEs) and can also be adapted to target other types of economic diversification. As many of the negative consequences of climate change and other environmental degradation are disproportionately borne by lower income groups and geographic areas, this inequitable distribution of climate change impacts (e.g., flooding in low-income areas) can be mitigated and in some cases reversed by an appropriate allocation of resources to developing and deploying green tech solutions. There is a potential for returns on investment in technology and related IP (for private and public entities alike) as a key stimulant to the social and economic benefits, companies and investors rely on patents and IP to protect their innovations against unwanted misappropriation, thus protecting returns on investment, and therefore their incentives to develop new technologies. Resulting economic activity has positive impacts on job creation.

The tendency for new patented technologies to enable the creation of new markets, and therefore jobs, that did not exist prior to the new products and services related to such technology. Innovation (and often related IP) can be essential to securing investment in such economic diversification. Moreover, innovation is clearly an essential step in the value chain for such new products, services, and markets—including markets for related jobs

14.4 Identified challenges, opportunities and stakeholder involvement

The SCGT feels that a near-term, or acute, multi-pronged approach—such as that used in the COVID-19 context—can inform current and future efforts to address the present and long- term urgency of the climate crisis. For the COVID-19 health crisis, similar accelerated R&D efforts have been rapidly implemented in numerous countries in light of the immediate term consequences of the Coronavirus crisis. For example, in some countries (e.g. the United States) accelerated patent examination policies that had already applied to green technology were quickly modified to afford

inventors of technologies addressing the problems of COVID-19 access to more streamlined patent exams and approvals while waiving certain filing and related fees that would otherwise apply.

Technology innovation that reduces dependency on carbon-emitting technologies is necessary to protect human health and the environment. Both AEPs for key patents in this area and variety of other measures to address climate change are necessary. In order to streamline the development of these activities, though many jurisdictions have given considerable thought and attention to definitions of green technology, not only in the context of AEPs or patent policy, but in regard to other economic, environmental, financial and social policies more generally. However, this has led to several and different definitions of what is meant, or what should fall within definition of green technologies.

SCGT encourages any single jurisdiction having an approach and taking steps to deal with urgent environmental issues that occur within its jurisdiction and coordination and awareness among multiple countries to reduce the risk that programs of one jurisdiction limit or reduce the effectiveness of programs in other jurisdictions, and thus to prevent having regional and global problems effectively unaddressed. SCGT proposes developing following preliminary definition of green technology for future use in multiple jurisdictions:

Green technologies (also known as 'green tech' and 'cleantech') are technologies that provide or are intended to provide an environmental benefit, including without limitation by:

- *contributing to restoration or maintenance of environment, preventing, reducing or repairing damage caused by pollution, including damage impacting food security;*
- *contributing to the development of renewable or more efficient energy resources; or*
- *the reduction and/or mi*tigation of greenhouse gas emissions and/or climate change.

Another issue to be addressed is the likelihood that the future development of smart grids, artificial intelligence, big data, 5G and other new technologies, will be instrumental in helping to develop relevant green technologies—and vice versa.

Technology transfer in green tech could be affected by ongoing and more general developments in global licensing, standards-setting (wherein licenses to some patents can be declared essential to users wishing to apply the standard, referred to as "standard essential patents" or "SEPs"), and the continued growth of patent pooling.

Green technology may eventually be seen as similar to ICT and related products (e.g., smartphones), wherein SEPs, pooling and global licensing practices may need to develop because of the large markets involved and the relevant technological issues concerned-such as interoperability and compatibility among components of the smart electrical grids and services, or smart transportation systems.

Additionally, the SCGT has identified several other complementary approaches that may be used in combination with AEPs to enhance green technology innovation e.g. AEPs' use of fee reductions, as well as potential rebates for other fees incurred as additional incentives when patenting green tech and also complementarity between AEPs and other targeted incentive programs for green start-ups, such as tax credits and grants.

14.5 Lessons Learned

While some countries' AEPs have shown promise on standalone basis, greater international consistency between AEPs and other green tech-related policies is potentially needed, to facilitate easier guidance, documentation and compliance for patent filers who use other green policy instruments. There is need to observe and better understand wider interactions between IP-related policies like AEPs and other relevant policy areas, such as those that may not directly relate to investments in green IP and technology development, so as to enhance the potential success of multiple such instruments, and not only promote the patenting of green inventions. Notable among other such policy areas would be those focused on:

- *"downstream" environmental regulations that can increase demand for use of green tech and IP;*
- *tax- and fee-related incentives for developers of early-stage tech and IP generally;*
- *policies that promote or require greener manufacturing and production processes, as well as energy and product consumption habits, for firms and individuals, respectively.*

A multi-pronged approach is prudent public policy, given that benefits of each promising policy instrument (e.g., AEPs, R&D tax incentives) may be indirect and less clearly measurable in light of multitude of factors at play. Merits of incentivizing green patents and innovation are compelling and increasing in importance-given growth and frequency of climate-change related impacts in order to combat climate change and mitigate public health risks and social costs it imposes.

15 Gilbert Agricultural and Rural Development (GARD) Center – Grid-interactive Solar PV systems for Schools and Clinics

Source/Reference: Gilbert Agricultural and Rural Development (GARD) Center – Grid-interactive Solar PV systems for Schools and Clinics (Antigua and Barbuda-2)

15.1 Key characteristics

PV installation training, Entrepreneurship, reducing CO2 emissions and electricity usage, increasing awareness of environmental management and renewable energy.

15.2 Description of low-GHG-emission strategies or policies

Antigua and Barbuda NDCs target of 100% Renewable Energy by 2030.and goal of net zero by 2040.

15.3 Impact of identified strategy or policy

Allowed 18 men and 2 women to develop entrepreneurship skills to enter private practice and transfer knowledge to increase capacity. Gave individuals training and skills in PV installation

15.4 Identified challenges, opportunities and stakeholder involvement

Covid-19 does not allow face to face training exercise, result in suspension of courses.

Men and women allowed to develop entrepreneurship skills to enter private practice and transfer knowledge to increase capacity. Imparting individuals training and skills in PV installation. Provides opportunities to learn a new skill and that can be transferred into the workforce.

15.5 Lessons Learned

Increases awareness of environmental management and renewable energy