The Youth and the Energy Transition

*The **Global Forum on Sustainable Energy (GFSE)** is a neutral multi-stakeholder platform, which is facilitating international dialogue on energy for sustainable development by taking into accounts the special interests and challenges of developing countries. GFSE aims at the establishment of a sustainable world energy system from a social, economic and environmental perspective.*

GFSE contributes to both international discourse and information dissemination on sustainable energy. The multi-stakeholder platform plays a crucial role in facilitating sustainable energy projects by bringing together donors, investors and project developers. Their interaction creates new opportunities and enhances existing initiatives in the field of sustainable energy.

1. Introduction

The young generation has lots of potential to contribute to the energy transition in many ways, for instance through engagement in decision-making processes at local and international level and as skilled workforce supporting the development of renewable energy, energy efficiency and clean mobility value chains. Below some key points of youth engagement are briefly discussed and some examples highlighted.

2. Green skills for the youth

Human capital is essential for the deployment of renewable energy and energy efficiency technology. For example, in the solar value chain, the number of jobs at the global level has substantially grown over the past years (see Figure 1 below) but a large number of skilled workers will still be needed in the coming years to achieve renewable targets in many countries. The solar branch provides jobs in several areas from technology acquisition and manufacturing, to sales and distributing of products, to technical installation, through to customer support and after sales services. The number of jobs in each area strongly depends on the business model. For example, in the off-grid sector, the number of jobs in the pay-as-you-go model[1] tend to concentrate in the areas of installation, manufacturing and acquisition as well as customer support, according to GOGLA (Global Off-Grid Lighting Association).[2]

Solar companies require a broad range of skills encompassing many areas such as solar technology and grid connection issues, construction skills, financial skills, software skills, economics of solar technologies, understanding of the permitting and commissioning processes and managerial skills, sales and marketing.[3] Delivering all these skills with good quality level is a considerable task that requires well-trained trainers in sufficient numbers and

[1] Mobile phone enabled pay-as-you-go (PAYG) models offer not only flexible payment terms (on a daily, weekly or monthly basis) for customers, but they also establish credit history. PAYG addresses larger markets and helps build consumer trust by offering payment methods that require minimal upfront costs.

[2] GOGLA, 2018: Employment opportunities in an evolving market Off-grid solar: creating high-value employment in key markets. Global Off-Grid Lighting Association.

[3] NISE, 2020: SKILL DEVELOPMENT PROGRAMME ON PROSPECTS FOR START-UPS IN SOLAR ENERGY TECHNOLOGIES. National institute of Solar Energy. India.

good training facilities on a sufficient scale. It also requires close cooperation between companies, educational institutions and governments.

Challenges include availability of skilled manpower, quality of training, lack of platforms to advertise solar jobs and other recruitment channels, lack of training institutions and accreditation of training institutions. A coordinated effort to develop the necessary human capital pipeline to meet the needs of this rapidly growing sector is necessary. To exploit its full potential, the renewable energy and energy efficiency industry needs to make use of the entire talent pool. That is, to include the talents of women, youth, and minorities to fill its growing demand for skills.

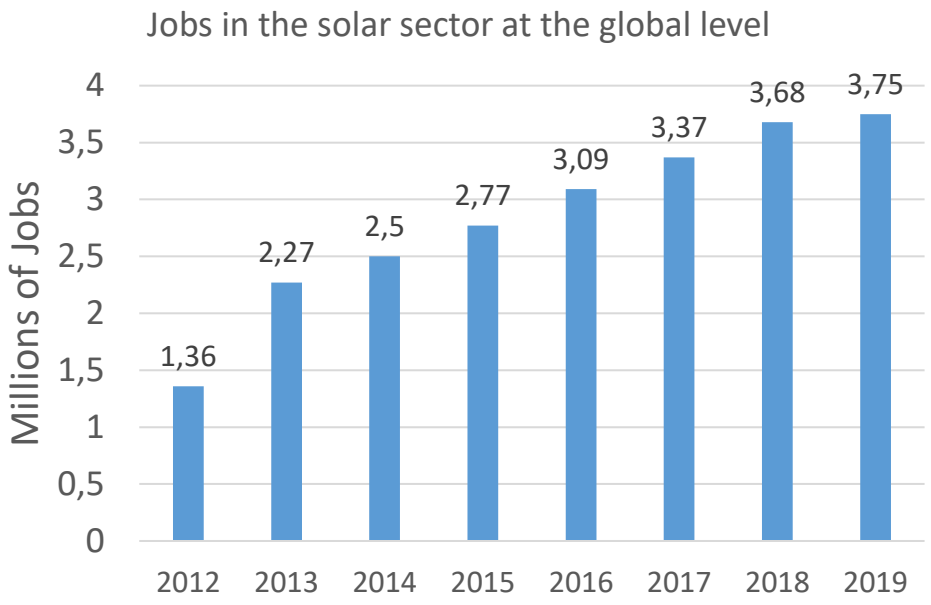


Figure 1; Number of jobs in the solar sector at the global level 2012-2019 (Source: IRENA, 2020: Renewable Energy and Jobs. Annual Review 2020).

Achieving a sustainable energy system and employment growth at the same time is possible through a greater integration of climate and energy polices with measures to support employment, and vocational education and training (VET) policies that encourage the development of skills needed by a low-carbon economy.[4] Measures that deliver job creation, address poverty and at the same time, lead to GHG emission reductions should be prioritized.

Youth are emerging as an important source of talent for achieving energy access, renewable energy, energy efficiency targets, and already account for a substantial fraction of jobs in this sector. At the same time, one of the most pressing challenges for emerging economies is a shortage of jobs among the youth. Enhanced skills development and decent work opportunities for youth can be created further in the energy and mobility sectors. Initiatives to develop business and technical skills and create jobs targeting the youth must be pursued

[4] OECD and cedefop, 2013: Greener skills and jobs. Highlights. OECD green growth studies

more vigorously, with increased collaboration between the private sector and educational institutions to improve the quality and accessibility of training. High quality, accessible certification programs that reduce the need for on-site internal trainings of new workers in companies are a big challenge. We need to collectively devise initiatives that empower the youth to realise their full potential, contribute to improving livelihoods and poverty reduction. This requires governments and industry to prioritise skill building for youth aimed at increasing the employment opportunities, raise productivity and boost individual earnings. Coordination with stakeholders in various sectors and good forecasting of needs for training and re-training per sub-sector are important to develop and deploy education, training and qualification systems that serve the needs of the solar market.

Electromobility is another area that creates promising future-oriented options in education and training, as well as job profiles, and create jobs and new employment opportunities, especially for young people. Targeted and flexible education, training, and qualification systems for electromobility must be established, to enable the build-up of innovation and technology competence in developing countries, to generate jobs, and to establish new skills. Training programmes are to be set up to for staff in trading and selling, assembly, operation and maintenance of e-vehicles (e-cars but also e-scooters, e-cargo bikes, e-boots) in order to make them familiar with the requirements of electromobility and accompanying digitalisation.[5]

Children and young people must be introduced, during their education and training, to the potential of e-mobility, to awaken their interest in technical, marketing and managerial job profiles in this area. Training modules on e-mobility should be introduced in the apprenticeship on automobile technology and vocational schools. For this purpose, cooperation between industry, schools, and training centres needs to be strengthened.

[5] BMLFUW, BMVIT, BMwFJ, 2012: Electromobility in and from Austria: the common path.

Incubation programs to support e-mobility start-ups in testing their technologies, business models and applying their solutions for e-mobility solutions are also useful in developing a local industry and business. For example, Siemens Stiftung and its not-for-profit enterprise, WE!Hub Victoria Ltd (WeTu), have established an incubation program for e-mobility solutions in rural Western Kenya.[6]

Prioritizing human capital as the premium resource for implementation of renewable and clean mobility targets is of particular importance. For this purpose, we need to strengthen youth capacities to engage in local renewable energy and energy efficiency value chains. This implies on the one hand, empowering and qualifying youth as entrepreneurs and salespeople but also training them to produce, operate, maintain and repair renewable energy and energy efficiency systems. This requires cooperation between companies and educational institutions to ensure that the youth develop marketable skills, have access to on-the-job training and internships and the match between demand and supply in the labour market becomes easier. It also calls for the implementation of certification systems for the workforce and accreditation systems for training institutions to enable companies hire good quality workers. In a nutshell, the partnership between businesses and the education sector should be deepened with a view to the development of curriculums and the anticipation of future needs. Training should lead to employment and synergies between practical activity, workplace learning and classroom work make young people more employable.

Also, listening to the youth voice is essential. Youth are struggling to identify new employment opportunities and their interests and needs should be reflected in the design of education and training programmes in the sustainable energy sector. Engaging youth perspectives is an important factor in ensuring that programmes are aligned with the needs and expectations of young people.

Besides knowledge and skills on renewable energy and energy efficiency, digital skills are essential for the youth to thrive in the future job market. Digitalisation is also paramount to make new business models and community engagement feasible. This refers to digitalisation of renewable energy technologies to enable remote control of facilities, facilitate demand response, and improve grid flexibility, among others. It also relates to digital skills for other non-technical business areas such as marketing and sales as well as flexible payment systems. Digital technologies are also starting to play an important role in boosting education and training of the workforce. Going forward, such technologies can provide flexibility on time, place and costs of the delivery of education. For example, focused online and blended learning programs (combining face-to-face interaction in the classroom and online learning) as well as learning platforms can facilitate market growth and contribute to reduce the deficit of skilled workers in the renewable energy, energy efficiency and e-mobility sectors. In this context, Artificial Intelligence is making inroads into e-Learning. AI allows tailoring learning materials

[6] Siemens Stiftung, 2018: E-Mobility Solutions for Rural Sub-Saharan Africa: Leveraging Economic, Social and Environmental Change.

to the needs and performance of a particular individual, thus facilitating personalized learning and has a promising future.

Combined efforts between the government, companies and educational institutitions to create local capacity to train young adults in the renewable energy sector is fundamental to achieve renewable energy goals. For example, a youth-focussed, job creation programme, with on-the-job training, specialist support for those who need it and a focus on developing future-focussed skills (e.g. in renewable energy, building retrofits, energy efficient construction). In addition, to foster the creation of youth-led small enterprises, credit and financing instruments, and other services to develop and market their business plans are necessary.[7]

One particular aspect concerns offering training and educational programmes that cater to the needs of Small and Medium Enterprises (SMEs) and help them generate jobs and income opportunities in renewables and energy efficiency. Generally, SMEs have a reduced capability to train people on green energy skills and to predict their own future skill needs. Developing green skills can also impose burdens and costs on SMEs. The critical role of policy frameworks – whether access to finance or skill development - is to help them create a competitive advantage through green skills and reduce the burdens.[8] Thus, SMEs require government support to give their staff green skills that allows SMEs to better position themselves in the market and reap the benefits of energy efficiency and renewables. A case in point is industrial energy efficiency. SMEs require significant skill improvements to be able to understand and implement energy efficiency measures and accrue the corresponding money savings, which in their turn can help them to to innovate their products and business models.

3. Examples of green skills development for the youth

Some examples of initiaves to provide green energy skills to the youth are briefly presented below:

Dual training in Serbia

The Austrian Chamber of Commerce (WKÖ) in cooperation with the Serbian Chamber of Commerce, the Institute for Educational Research of the Economy (ibw), the educational institute ZAVOD (part of the Serbian Ministry of Education) and the German International Cooperation (GIZ) successfully launched a project to support the implementation of **dual training** in Serbia, with support from the Austrian Development Agency (ADA) and the Austrian Ministry for Digialisation and Economy. Dual vocational training combines apprenticeships in a company and vocational education at a vocational school in one course, allowing apprentices to gain hands-on work experience and receive theoretical foundations at the same time. The project contributes to alleviate the shortage of skilled workers,

[7] Education Development Center, Inc., 2018: Global Promotion of Youth-Led Enterprises in Off-Grid Renewable Energy with Applications in Costa Rica. Project document for the Global Environmental Facility (GEF).

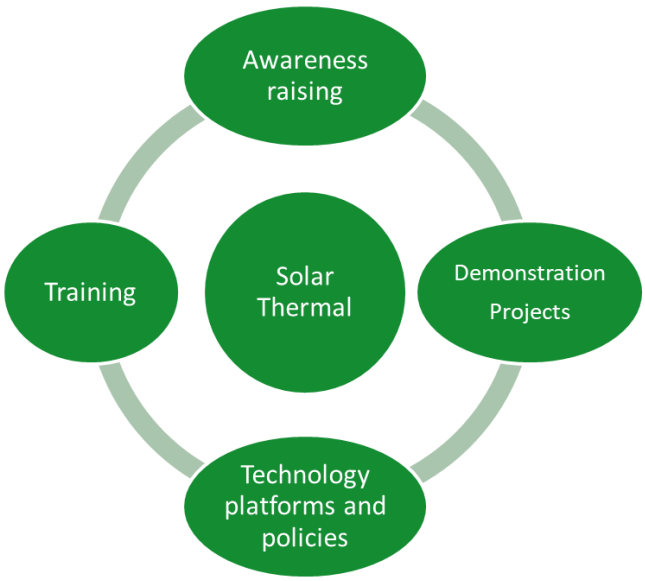
[8] Koirala, S., 2018: SMEs: Key drivers of green and inclusive growth. Environment Directorate. OECD.

specifically for Austrian industries operating in Serbia, and the high youth unemployment rate. The project supports the Serbian Chamber of Commerce with the implementation of the Dual Education Act 2017. The development of dual training in Serbia has resulted in the educational system being adapted to the needs of the companies and a reduction in the costs of recruiting employees. The dual training is part of the secondary vocational training, whereby pupils acquire knowledge in school as well as practical knowledge in a real work environment in a company.[9]

As part of the project, several new apprenticeships were introduced, such as retail sales representative, specialised construction worker, information and telecommunications technician, electrician and buildings technician in hotels etc.

SOLTRAIN in Southern Africa

SOLTRAIN is a regional initiative on capacity building & demonstration of solar thermal systems in the SADC region carried out by AEE INTEC together with regional partners and supported by the Austrian Development Agency (ADA) and the OPEC Fund for International Development (OFID). The aim of SOLTRAIN is to support the target countries to develop value chains for solar thermal.



The SOLTRAIN programme focuses on the following main elements:[10]

- Supporting political stakeholders with the implementation of Solar Thermal Roadmaps
- Increasing technical skills by carrying out training courses
- Raising awareness on the potential of solar thermal technologies
- Strengthening institutional structures, which can offer expert advice, training and technical support to the local industry and politicians

[9] https://www.wko.at/service/aussenwirtschaft/lehrlingsausbildung-in-serbien.html
[10] https://soltrain.org/about/focus/

- Demonstration of solar thermal technology by supporting the design, installation, and quality check of demonstration systems.

As part of its activities, SOLTRAIN runs a Student Project Support Scheme for postgraduate studies. This programme provides guidance to students on various topics related to solar thermal technologies such as for example:

- solar thermal systems in the health sector
- Analysis of measurement data from selected systems from the SOLTRAIN project
- use of solar thermal technologies for heating/drying/cooling in industrial applications.
- Documentation and analysis of mass housing programmes with mandatory installation of solar water heaters

Solar Energy Training Network (SETNET) in India

The National Institute of Solar Energy in India (NISE) has established the Solar Energy Training Network (SETNET) to build skills and capacities to ensure the availability of qualified solar energy professionals. SETNET contributes to ensure availability of skilled manpower to meet the solar deployment target of India for 2022 (100 GW), which represents a significant challenge. Through a competitive process, SETNET partners across the country were identified to provide the skill development courses. The SETNET network seeks to harmonise training concepts and approaches to make solar training programs compatible with each other and make sure they cover a minimum amount of key materials to ensure their quality.[11] Through SETNET, young people have been trained and found jobs in the Indian solar industry.

Youth energy squad in the U.S.

The Youth Energy Squad is a program of EcoWorks[12], a Detroit-based non-profit organisation that creates just, equitable, and inclusive solutions to climate change and other community sustainability challenges. The Youth Energy Squad engages youth from diverse backgrounds in hands-on service learning projects that make their homes, schools and communities more sustainable and teaches them hands-on leadership skills. It offers activities in and beyond the school to engage students with sustainability and leadership. For example, during summer, the YES Summer Program provides employment opportunities for high school students centered on youth leadership, social justice, and sustainability. Students selected for the program become members of Americorps, a voluntary civil society program supported by the U.S. federal government, foundations, corporations, and other donors that engages adults in public service work with a goal of meeting critical needs in the community.[13] They also receive a stipend, a scholarship and mentorship from AmeriCorps.[14]

[11] NRDC and CCEW, 2016: FILLING THE SKILL GAP IN INDIA'S CLEAN ENERGY MARKET: SOLAR ENERGY FOCUS. National Reosurces Defence Council and Council on Energy, Environment and Water.

[12] https://www.ecoworksdetroit.org/

[13] https://americorps.gov/serve

[14] https://www.youthenergysquad.org/instruments

Training in energy efficiency and renewable energy for youths in Nigeria

The United Nations Human Settlements Programme (UN-Habitat), in partnership with the Federal Government of Nigeria, conducted training in energy efficiency and renewable energy technologies, green entrepreneurship and enterprise development for young people.[15]

The training focused on empowering young entrepreneurs to start micro enterprises in the renewable energy sector, which sell products to replace kerosene stoves and lanterns, act as multipliers in their communities to raise awareness for renewable energy and stimulate behavioral change in their communities.

The training allowed participants to build solar lanterns, build, assemble and install Solar Home Systems and improved cook stoves as well as set up briquette production to substitute charcoal and firewood.

E4VAfrica- African electromobility and green energy accelerator

EV4Africa is a technology accelerator that helps African mobility and green energy innovators to spread their innovations across Africa. It accompanies business through several stages from the conception to market. It also offers re-skilling and up-skilling for young women and men in e-mobility and accompanying digital business models. EV4Africa provides support for the development and testing of innovative e-mobility concepts and gives young entrepreneurs access to a network of companies and financing possibilities.[16]

Learning and Knowledge Development Facility (LKDF)

The Learning and Knowledge Development Facility (LKDF) is a platform that promotes industrial skills development among young people in emerging economies. LKDF works with the private sector through Public Private Development Partnerships to support the establishment and upgrading of local industrial training academies to help meet increasing demand for skilled employees. LKDF also supports market transformation programmes through a systemic approach tha reduces proverty, addresses causes of market failure and improves the long-term impacts of development projects. The LKDF also provides a dialogue platform for companies to discuss with peers how to inplement training and educational programmes together with national governments, NGOs and other LKDF partners. The facility leverages the experience in the private sector to make training programmes more effective and market responsive.

4. Social innovations and the role of the youth

The energy transition has given rise to various forms of social innovation, defined as new ideas (products, services and models) that simultaneously meet social needs and create new social

[15] UN Habitat: Youths in Nigeria trained in renewable energy technologies and green entrepreneurship. https://www.un.org/africarenewal/news/youths-nigeria-trained-renewable-energy-technologies-and-green-entrepreneurship

[16] https://www.ev4africa.com/what-we-do/

relationships or collaborations.[17] Examples of social innovations are energy cooperatives, energy "prosumers" consuming and producing energy and new participative forms of decision making such as citizen assemblies.[18] They are linked to new business models and governance arrangements and can contribute to making energy more sustainable and affordable. The youth have a key role to play in creating and disseminating social innovations for the transition towards decentralised, digitalized and decarbonized energy.

We need to create enabling conditions that facilitate the emergence of social innovations that lead to the development of new business models and facilitate greater acceptance of the transition towards low-carbon, climate resilient energy systems. Youth-led social innovations have a significant transformative potential to solve both local and global problems, using their creativity and capacity to quickly adapt and learn.

For example, the youth is best positioned to make lifestyle changes that favor more resource-efficient and low-carbon consumption patterns. Sustainable consumption initiatives can be created through well informed public opinion, awareness raising and capacity building for individual consumers and communities that lead people to, for instance, demand and buy more energy efficient appliances, and empower themselves and their communities to address energy and mobility needs. The youth are especially well positioned to lead and implement such a global sustainable consumption movement.

It is also important to create equitable opportunities for youth who may be left behind due to technical issues and the digital divide. Inequalities in digital access are very large. For example, in schools there are massive inequalities in internet access. Facilitating digital inclusion for the youth is important to increase their skills and employability, enable them a more meaningful participation in economic activities, and facilitate engagement in their communities. Digitalisation can also facilitates social inclusion for the least favoured populations. Through digital tools, they can become more involved in social and political activities, voice their concerns and ideas, and organize themselves better.

Together with other factors, digitalisation is driving a transformation in the energy sector. Among others, digitalisation has become essential for the integration of renewables into electricity grids. It is also enhancing energy management systems in buildings and industry. Digitalisation also facilitates innovative business models and has enabled new payment systems (e.g. Pay-as-you-go). Given the importance of digitalisation in the sustainable energy sector, digital skills are indispensable to integrate the youth in renewable energy and energy efficiency value chains. This requires cooperation between a range of stakeholders (e.g., the private sector, government, development banks, NGOs, and UN agencies).[19] Equipping young

[17] European Commission, 2013: Guide to Social Innovation. Regional and Urban Policy. February, 2013. https://ec.europa.eu/eip/ageing/library/guide-social-innovation_en

[18] Wittmayer, J., de Geus, T., *et al.* 2020: Beyond instrumentalism: Broadening the understanding of social innovation in socio-technical energy systems, Energy Research & Social Science, ISSN: 2214-6296, Vol: 70, Page: 101689

[19] Decent jobs for youth, Digital Skills Campaign. https://www.decentjobsforyouth.org/commitment/58

people with job-ready digital skills will contribute to achieving SDG 7 and SDG 8 (achieving decent work for all and inclusive and sustainable economic growth).

Digital technologies are also starting to play an important role in boosting education and training of the workforce. Going forward, such technologies can provide flexibility on time, place and costs of the delivery of education. For example, focused online and blended learning programs (combining face-to-face interaction in the classroom and online learning) as well as learning platforms can contribute to reduce the deficit of skilled workers in the renewable energy and energy efficiency sectors.

5. Youth engagement

Sustainable energy has an essential role in government strategies to build back better in the current economic crisis. Energy efficiency and renewable energy, for example, can deliver a significant number of jobs and provide multiple benefits, among other related to climate change mitigation.

The transition to a sustainable energy system is a social and technical challenge that requires the meaningful participation of wider society and in particular of citizens, including youth and women. **Societal engagement has become central for energy transitions that are more democratic, sustainable, socially shaped, responsible, just, and responsive to public values and human needs**.[20] **The youth has a role to play in shaping the legal and policy frameworks as well as the political foundations for a just and effective energy transition.**

We need to build foundations for better governance in the energy sector and encourage multi-level energy and climate dialogue between stakeholders to overcome political resistance and shape the political incentives that are necessary for the transformation. Engaging the youth in decision-making will support shared ownership of transition strategies and help gaining political buy-in in their implementation.

A fair and equitable energy transition is necessary. The energy transition cannot be achieved without justice towards both fellow humans and the environment. Not considering justice can erode the political support for the transition. To achieve justice, reducing energy poverty and increasing access to clean, sustainable and affordable energy carriers is essential.

The youth can play a fundamental role in this transformation. By including them in the energy transition, we make sure that the future energy systems are fit for a sustainable society.[21] Youth engagement can help governments achieve improved results on public service delivery, public financial management, governance, social inclusion and empowerment. Youth leaders can engage with policymakers and other relevant stakeholders in civil society and the private sector to advance the energy transition. Their active involvement in implementing SDG7 and

[20] Chilvers, J., Pallett, H., Hargreaves, T., 2018: Ecologies of participation in socio-technical change: The case of energy system transitions. Energy Research & Social Science Volume 42, August 2018, Pages 199-210. https://doi.org/10.1016/j.erss.2018.03.020

[21] https://www.unido.org/stories/austria-wants-more-women-and-youth-engage-energy-transition

related SDGs that represent the interests of young people such as SDG1 on fighting poverty, SDG4 on providing quality education and SDG8 on decent work and economic growth is critical. Young people should be given a say on the substantive matters and be involved in the decision-making process. They should also be provided training on how to self-organize and turn their ideas into actionable proposals. We need to help develop the 21st century youth leadership skills to tackle the challenges at hand in the energy sector.

One example of youth engagement at the international level is the SDG7 Youth Constituency, an engagement mechanism for young people in UN and UN-related processes focused on energy topics. SDG7 YC works on policy advocacy in inter-governmental and multi-stakeholder processes of UN and allied institutions, including engagement with member states but also on building regional networks of youth involved in renewable energy sector, among others.[22]

Young people can also engage in their communities. Through youth engagement, communities can create better services and support to young people. Local communities in many countries are being particularly affected by the COVID-19 pandemic and the climate crisis. Many communities also lack access to modern energy services. At the same time, communities are developing homegrown, creative solutions building on local strengths that can help them overcome the crisis, improve their livelihoods, address long-term inequity and injustice and tackle climate change. Decentralised energy systems enable the participation of local actors such as communities, SMEs and micro-enterprises in the provision of energy services and have spurred the development of new business models and social innovations. The youth can apply their substantial innovative capacity to drive these developments further. Decentralisation empowers communities to make their own decisions regarding the choice of energy systems that are able to provide the energy services they need and accrue the most benefits to them through open, democratic participation and governance structures. **Young people can help implementing people-centered energy solutions based on the needs of the people and communities they serve such as energy communities and jointly acting renewable consumers.** At the same time, the youth can engage in supporting broad social mobilisation towards climate and environmental action.

In the context of a fair transition, measures should also be outlined for countries and communities that depend on fossil fuels to help them achieve the transformation towards sustainable economic activities and reduce the economic losses. Energy transitions could affect local communities substantially, resulting in job losses, and reducing their income, for instance after closure of large fossil fuel plants and coal mines. The social and economic effects of the transition must be addressed. Just transition mechanisms focusing on people, regions and sectors most affected by the energy and climate transitions can help create new jobs and new economic activities through a combination of worker education and retraining, social

[22] SDG7 Youth Constituency, 2020: Overview and Introduction to the UN Major Group for Children and Youth (UN MGCY). https://static1.squarespace.com/static/5b2586e41aef1d89f00c60a9/t/5f44d8e26804fe2415e3afb0/1598347497454/SDG7+YC+Introduction+Deck.pdf

support, local economic development tools for communities and support to the creation of new businesses, among others. Supporting the youth to achieve a just transition is essential.

Climate education also plays a fundamental role in shaping the minds of the new generations as to the magnitude of the challenge ahead to curb climate change and how can they solve this challenge. This requires educating their teachers as well such that they are able to convey the subject to their pupils in a good manner.[23] Good climate education is fundamental to remove system inequalities and achieving a net zero energy system. Quality climate education should be accessible to everyone.

6. Examples of youth engagement

The youth are taking an innovative approach in solving the multiple challenges of sustainable energy. Below some examples are briefly described.

Youth involvement in the Austrian Spatial Development Concept (ÖREK 2030)

Young experts from all provinces of Austria were asked to co-design the guidelines of the new Austrian Spatial Development Concept (ÖREK 2030). A representative group of 18 young experts was selected through an open application process. Although only 18 experts were selected, all applicants (120) were given an opportunity to engage with the process and provide inputs through a pre-conference. The young people selected to participate provided input on social and technological challenges, as well as on climate-friendly spatial development. The elaboration of the ÖREK is a participative process, involving actors from national, provincial and local levels. Involving youth helps ensuring a future-proof concept. Thematic workshops for the young experts and co-creation sessions with senior experts have been organised. The young experts also participated in workshops with stakeholders, the conference on spatial development and a young experts conference.[24]

Youth Climate Leaders (YCL)

The Youth Climate Leaders initiative was created in 2018 by four Brazilian women and offers solutions to help young people tackle the climate crisis and structural unemployment. Young people have access to a global network and opportunities in organizations and projects engaged in climate action. The organization provides on-line training courses and mentoring programmes and propagates professional opportunities for young people bridging gaps with organizations that are already established in this sector. YCL local and regional hubs have been created in Latin America, Africa, and Europe. The hubs act as platforms to coordinate climate solutions and activities locally. They convene key actors in the fields of climate change and

[23] The Climate Reality Project, 2020: What does climate justice look like around the world.

[24] European Commission, 2021: Good Practices of Youth Engagement. Annex. Youth for a Just Transition. https://ec.europa.eu/regional_policy/sources/docgener/guides/youth_just_transition__annex_en.pdf

sustainability including local experts and organizations to promote YCL programmes and connect YCL fellows to job opportunities in their region.[25]

Youth climate council in Frederikshavn, Denmark

Frederikshavn, small town in the coast of Denmark has approved a Masterplan for Renewable Energy 2030, which sets a target of 100% renewable energy supply by 2030. The masterplan is an essential tool for energy managers in the city, facilitating overseeing and coordination of the transition process. Annual evaluations of the plan are reviewed and approved by the city council.

The city has implemented a number of measures including setting up a municipal Youth Climate Council to unlock the creative potential of young people in the region. The group focuses on educational activities and is looking for ways to implement the 17 United Nations Sustainable Development Goals within the context of Frederikshavn, translating them into concrete initiatives in everyday life, informing and engaging their peers and the citizens. They also participate in national and European-wide activities voicing their ideas in the climate and energy debate.

The city council has created a steering committee on sustainable development and green growth, headed by the mayor. The group consists of representatives of the Citizens' Forum, the Youth Climate Council, industry representatives, educational institutions and local politicians.

Participation of the youth in the Dutch Climate Agreement

The Dutch National Climate Agreement, which was concluded at June 2019, contains agreements with different sectors on what they will do to help achieve the climate goals. The participating sectors are: electricity, industry, built environment, traffic and transport, and agriculture. Two organisations representing young people were invited to participate in the process. One of them is the young climate movement (JKB). The second is KEK, a Dutch think-tank formed by young professionals for climate and energy affairs. The young people organised a bottom-up selection process to choose who will represent them in the negotiations, in a democratic process based on competence.

The young climate movement (JKB) has been involved in setting the Youth Climate Agenda and discussing topics of the Dutch Climate Agreement with its members and setting up capacity building programmes with the Ministry of Foreign Affairs to help youth in developing countries build their own climate agenda.

The two organisations were involved in several joint activities, including:

- A joint initiative to professionalise youth participation in local climate and energy policy

[25] https://www.youthclimateleaders.org/

- Building a Youth Climate Platform to monitor the process of the Dutch Climate Agreement Targets together with the ministry of economic and climate affairs.

Lal Sabuj Society in Bangladesh

Lal Sabuj Society in Bangladesh is working across the country on climate change, the protection of children and women, mental health, self-defence for girls, soft skills development, debate practice, and other areas. Thanks to their efforts, opportunities are being created for others, especially children at risk from the impacts of climate change in coastal areas.

Currently 400 children across Bangladesh are working with the Society to clean up public places like canals and tourist spots and separate the recyclable plastics, which they sell at recycling centers. They reinvest the money spending it on planting trees. They also working on developing a mobile app that presents various information about climate change by creating content, quizzes and challenges.[26]

Youth Challenge International (YCI) in Canada

The organization brings together young people in Canada to take action on environment and drive youth-led climate solutions.[27] It conducts activities in the following main domains:

- **Peer-to-Peer Education:** Through the Global Youth Partnerships Solution, YCI works together with local development partners to design and implement youth innovation programs through Canadian volunteers and peer-to-peer learning with a sector focus on health, private sector development and democratic governance.
- **Volunteer Activities for capacity building:** Together with local partners, YCI identifies capacity building needs in the local context. Thereafter, volunteers from Canada and other countries with the required sjills are identified and work alongside youth in partner communities to co-facilitate and co-implement programs with local champions. Capacity activities have been taking place with 11 organizational partners in Ghana and Tanzania.[28]

[26] https://www.voicesofyouth.org/blog/what-are-impacts-climate-change-and-environmental-damage-bangladesh
[27] https://www.yci.org/InnovateMYFuture/home
[28] https://www.yci.org/

7. Key messages

Green skills

1	Developing and emerging economies must strengthen their capacities to develop green skills.
2	Suitable policies prompting cooperation between companies, government and educational institutions are necessary
3	Models such as dual training, allowing apprentices to receive hands-on training in companies while at the same time attending lectures in vocational schools, are very effective in addressing real-market needs
4	Development cooperation programmes combining training, demonstration projects, technology platforms, policy development and awareness raising have proven to be effective
5	Digitalisation skills will become more and more relevant to implement new business models in the clean energy and mobility sectors (e.g. PAYGO, shared mobility, Renewable energy communities). A strong focus must be put in providing digital skills to children and youth. At the same time, digital tools will play a very important role in training and education in the future.
6	Young entrepreneurs are well positioned to explore innovative business models and should receive the training they need to launch start ups and bring them to success.

Youth engagement

1	Youth engagement is fundamental to shape the policy agenda in the sustainable energy field and achieve energy and environmental justice
2	Youth engagement can help governments achieve improved results on public service delivery, public financial management, governance, social inclusion and empowerment
3	Young people can help implementing people-centered energy solutions based on the needs of the people and communities they serve. At the same time, the youth can engage in supporting broad social mobilisation towards climate and environmental action.
4	Young people can apply their innovation power to advance new technological solutions and business models to facilitate the uptake of renewables, energy efficiency and clean mobility solutions
5	Supporting the youth to achieve a just energy and climate transition is essential. Just transition mechanisms focusing on people, regions and sectors most affected by the energy transition can help create new jobs and economic activities.
6	Climate education also plays a fundamental role in shaping the minds of the new generations as to the magnitude of the challenge ahead to curb climate change and how can they solve this challenge. This neceesitates good education for teachers and their pupils.

*The **Global Forum on Sustainable Energy (GFSE)** is a neutral multi-stakeholder platform, which is facilitating international dialogue on energy for sustainable development by taking into accounts the special interests and challenges of developing countries. GFSE aims at the establishment of a sustainable world energy system from a social, economic and environmental perspective.*

GFSE contributes to both international discourse and information dissemination on sustainable energy. The multi-stakeholder platform plays a crucial role in facilitating sustainable energy projects by bringing

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