Global Forum on Sustainable Energy

Activity Report, November 2018 – October 2020

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Authors: Shruti Athavale, Leonardo Barreto Gómez, Anna Kassai

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Mariahilfer Straße 136, A-1150 Vienna, Phone +43 (1) 586 15 24, Fax +43 (1) 586 15 24 - 340
E-Mail: office@energyagency.at, Internet: http://www.energyagency.at

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Foreword by the GFSE President

In the period under review, the outbreak of the COVID-19 pandemic and its worldwide repercussions on mortality, health and socio-economic development has been a game-changer that governments and societies everywhere were not prepared for.

The impact on sustainable energy and climate mitigation and adaptation – at the moment of this writing – is unclear. While the reduction in economic activity led to a marked decline in greenhouse gas emissions, experience with other economic crises teach us that such declines tend to be temporary and that GHG emissions rise quickly as soon as economic recovery occurs unless systemic changes are introduced.

As many countries around the world, including the EU and indeed Austria, are legislating major post-COVID-19 recovery programmes, it is of the essence that climate policies commensurate with the Paris ambition and comprehensive strategies for energy transitions are implemented in the context of post-COVID-19 stimulus packages. Since women are impacted differently and often more severly than men by the pandemic and given the general under-representation of women in the energy sector, it is crucial that implementation promotes inclusivity and diversity.

As presential encounters are greatly restricted by the pandemics, the Global Forum for Sustainable Energy will expand its online activities, re-invigorate its wide international network and use more actively modern communication tools to continue to advance the much needed transition to energy systems with low greenhouse gas emissions.

Ambassador Irene Giner-Reichl

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1 Introduction

The Global Forum on Sustainable Energy (GFSE) is a neutral multi-stakeholder platform facilitating international dialogue on energy for sustainable development by taking into account 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.

GFSE operates at the intersection of international energy discourse and diplomacy. Conferences and regional fora or workshops are the visible peak of the GFSE activities. GFSE activities can be grouped into three categories, namely networking, dissemination of information and facilitation of project initiatives.

1. GFSE is a networking agent

The Global Forum on Sustainable Energy interacts and networks with other energy initiatives and organizations in the energy field and thereby enhances synergies and complementarities. GFSE has been playing an active role in bringing together several energy-related initiatives, launched at the World Summit on Sustainable Development in 2002 in Johannesburg. GFSE works as an information provider and networking agent for multitude of stakeholders, including the Sustainable Energy for All initiative (SEforALL).

2. GFSE informs on sustainable energy

GFSE prepares and initiates events devoted to the promotion of and dissemination of energy technologies in the renewable energy and energy efficiency fields in the context of sustainable development, and to showcasing and discussing inclusive solutions for the transition towards a sustainable energy system.

3. GFSE facilitates project initiatives

GFSE fosters partnerships and facilitates energy for sustainable development initiatives. It supports private-public partnerships by presenting opportunities and identifying investment and partnership possibilities.

History of GFSE Activities

Since its establishment in 1999, the Global Forum on Sustainable Energy has engaged in numerous activities and has significantly contributed to shape the national and international debate on sustainable energy and development.

The Vienna Energy Forum (VEF) developed out of a series of international and regional GFSE Meetings, which addressed different aspects of energy for sustainable development. Detailed records of these GFSE Meetings, including presentations and main outcomes, can be found on our website www.gfse.at and in the GFSE Activity Reports 2012-2014, 2014-2016, and 2016-2018.

More recent activities and publications of the Global Forum on Sustainable Energy are described in this report.

2 GFSE Events

In order to bring together various stakeholders actively working in the energy, climate and developmental fields, the Global Forum on Sustainable Energy regularly organizes thematic workshops and expert discussion rounds. Due to the COVID-19 health crisis, only one event was organized during the 2018 – 2020 phase.

2.1 Expert Workshop on "Sustainable Cities in Developing Countries

The Global Forum on Sustainable Energy in cooperation with the Austrian Federal Ministry for Sustainability and Tourism (BMNT) (now called Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK)) organized an Expert Workshop on "Sustainable Cities in Developing Countries" on Wednesday, 29th of May 2019. The expert workshop helped build bridges between representatives from international organisations, Austrian think tanks and research institutions as well as from the city administration.

Irene Giner-Reichl, Austrian Ambassador to the Federative Republic of Brazil, President of GFSE and Vice-Chair of REN21, provided the welcome address, where she emphasized the need for actors on all levels to cooperate and share knowledge so that individual projects fit together into a low greenhouse gas emission, climate resilient city system.

After the initial welcoming statements by Ambassador Irene Giner-Reichl, two key note speeches were given to set the scene for the following discussions. Mr. Jorge Pinheiro Machado, R20 Director for Latin America, gave a brief overview of the work the R20 Regions of Climate Action association is doing in Brazil. R20 recently supported 70 Brazilian municipalities to develop new legal structures to accompany the implementation of a project on LED streetlights. As part of his work as the R20 Director for Latin America, Mr. Machado recently travelled to a number of smart cities around the world in order to see which ideas could be implemented in Brazil. Though many of these projects were interesting, they were difficult to translate and adapt to the Brazilian context. Despite these challenges, Mr. Machado did find one example, namely the aspern Seestadt project, which could be used in Brazilian municipalities and cities. He highlighted that a Memorandum of Understanding was recently signed between the Brazilian city of Sao Carlos, R20, aspern Seestadt and the Austrian Chamber of Commerce on the topic of Smart Cities. Mr. Machado emphasized the need to adapt scientific knowledge into reality through the implementation of concrete solutions that could be used as "lighthouse" projects in developing countries.

The second key note speech was given by Mr. Francesco Azzena, International Consultant at UNIDO, who presented the "Bridge for Cities 4.0 - Belt and Road Initiative: Connecting Cities through the New Industrial Revolution". The "Belt & Road Initiative" (BRI) is a global initiative that aims to promote cooperation, development and inclusiveness in the commu-

nities and countries of the historical Silk Road. The BRI focuses, in particular, on developing connections and partnerships at the meso-level (i.e. cities) to promote sustainability and environmental awareness. As part of this initiative, a high-level international event is held in Vienna, Austria every year to bring together private sector representatives with governmental representatives to discuss challenges and implement innovative smart cities concepts in developing countries. Mr. Azzena highlighted the need to focus on connecting cities based on at least one common feature, for example their geographic location or cultural heritage, in order to make long-lasting city-to-city partnerships and to enable technology transfer on both sides.

Following these key note speeches, the panelists exchanged experiences and discussed methods and challenges to bring sustainable city practices to developing countries. The panel sessions were moderated by Ambassador Irene Giner-Reichl. The expert workshop drew attention to different elements for developing smart cities in emerging and developing countries, including the challenges to properly plan various steps in a smart city, financing barriers, the importance of the ecological construction of buildings, as well as best-practice examples in the field of bioengineering and landscape construction.

Figure 1: Impressions from the Expert Workshop (Photo Credit: AEA)

Mr. Walter from the Austrian Development Agency (ADA) provided concrete examples of how innovative financial instruments can support municipal infrastructure investment finance for cities. In particular, he mentioned the Sustainable Energy Fund for Africa, a multi-donor trust fund administered by the African Development Bank, which supports small- and medium-scale renewable energy and energy efficiency projects in Africa. In many cases, commercially-viable projects remain in the project pipeline, because initial high development costs prevent these projects from accessing the necessary financing. This fund targets this barrier by offering early stage capital to fund clean energy projects in Africa. Mr. Walter and Mr. Machado, who also took part in the panel discussion, drew attention to the need to improve the credit worthiness of cities in order to finance municipal infrastructure projects.

Buildings offer enormous potential for cities to undertake climate-resilient measures. Austria has long been a forerunner in green buildings, which is further encouraged by dedicated support programmes like klimaaktiv, the Austrian climate protection initiative. Rosemarie Stangl from BOKU and Susanne Formanek from IBO emphasized the need for cities to implement low-cost solutions, for example greening cement walls or painting rooftops white, to prevent urban heat islands from forming. Ms. Stangl illustrated the importance of using tailored landscape construction practices and vegetation technologies to prevent erosion and support flood control in cities. The IBO is currently pushing projects that utilize renewable energy technologies and energy-efficient measures to demonstrate the benefits of green buildings in order to help promote such practices in other cities and contexts. Clothilde Rossi di Schio of SEforALL highlighted the importance of providing sustainable cooling solutions for all, a goal that the Cooling for All initiative of SEforALL aims to achieve. This initiative targets smaller cities under 1 million that are rapidly growing and benchmarks their progress towards providing cooling solutions to their citizens.

Hans-Martin Neumann from the Austrian Institute of Technology (AIT) demonstrated how research and digital technologies can help cities bridge the gaps between the planning and implementation of smart city concepts. He also emphasized that cities around the world have a different understanding of what a smart city is. For example, for the City of Vienna, a close cooperation of institutions and social inclusion is a crucial element of its Smart City Framework Strategy, while other cities promote primarily technology-driven smart cities. Stefan Geier from the City Administration of Vienna further noted that cities need to invest in ecological solutions early-on in order to improve the living standards of its citizens as well as the importance of having a nexus approach between water, energy, land use, waste management, sanitation and transport in urban areas.

In conclusion, the panelists of the expert workshop drew attention to the need to develop appropriate context-specific solutions for developing countries that not only offer social and economic benefits, but also address environmental concerns. Panelists also emphasized the importance of incorporating indigenous ways of construction into modern-day architecture. The uptake of renewable energy and energy efficiency can further yield substantial co-benefits and should be coordinated with other urban infrastructures. City-level action must be supported by national policies enabling cities access to sufficient resources and knowledge and guaranteeing sufficient coordination between city administrations and regional/national authorities. In addition, given the shortage of public funds, cities must increase their ability to attract private investment to climate-resilient urban infrastructure projects.

More information on the event, including the agenda and presentations, can be found on the GFSE website.

3 GFSE Policy Briefs

The Global Forum on Sustainable Energy develops policy briefs on particular topics of global relevance in the context of sustainable energy and development, which serve as tools to aid the interaction and knowledge exchange between private and public stakeholders on all levels, policy makers and technical experts. All policy briefs are available on the GFSE website.

3.1 Policy Brief #8: Sustainable Cities

SDG 11 calls for inclusive, safe, resilient and sustainable cities. The world is currently experiencing an unprecedented trend of rapid urbanisation. As of 2014, the share of the urban population in developing and newly industrialising countries had already reached 63 percent. Cities and towns are expected to host around 60 percent of the world's projected population (8.2 billion people) by 2030. Currently, most cities rely primarily on fossil fuels for their main energy source, resulting in significant GHG emissions. In order to guarantee that cities continue to be liveable urban centres, governments need to invest in clean, reliable and affordable energy sources. Early integration of urban planning measures with low greenhouse gas emissions is critical for the development of sustainable cities.

Urbanisation and industrialisation are two interlinked processes, which are both driven by energy. Access to cleaner and affordable energy options is therefore essential for improving the livelihoods of the poor in developing countries, and particularly in their exponentially growing urban areas. However, poor segments of the population live in low-cost housing areas or informal settlements with little or no infrastructure, experience severe liquidity constraints and have to satisfy the most pressing short-term needs before they can pay their energy bills or undertake other investments. New business models, community empowerment, collaborative engagement of multiple stakeholders, awareness raising, as well as new financial and institutional mechanisms are needed to adequately address the urban energy and poverty challenges. Renewable energy and energy efficiency can help provide energy services to low-income customers in urban areas of developing countries.

Developing and emerging countries face a number of challenges to meet basic needs, address inequality, build infrastructure, overcome shortage of skills, alleviate poverty, diversify and modernise their economies, promote the private sector and reduce unemployment, among others. Through innovative policy frameworks, technologies, business models and financing schemes, renewable energy and energy efficiency can substantially contribute to tap synergies between economic development and poverty reduction, on the one hand, and climate protection on the other. Low greenhouse gas emission energy systems will also have to be robust to be able to survive the variety of climate outcomes they might need to face in the future.

Though cities tend to be more resource-efficient, they are quite susceptible to the risk of climate change. On the other hand, cities are well positioned to undertake climate protection actions and implemented integrated city planning approaches. Numerous cities and towns have recognized the need to design sustainable cities with integrated low greenhouse gas emission measures and have shown this commitment through a variety of initiatives, which will be touched upon in greater detail below. This GFSE policy brief looks at the benefits of renewable energy penetration and energy

efficiency, while touching upon the challenges cities will face due to climate change effects, before presenting a number of examples of sustainable city projects in major cities of developing countries.

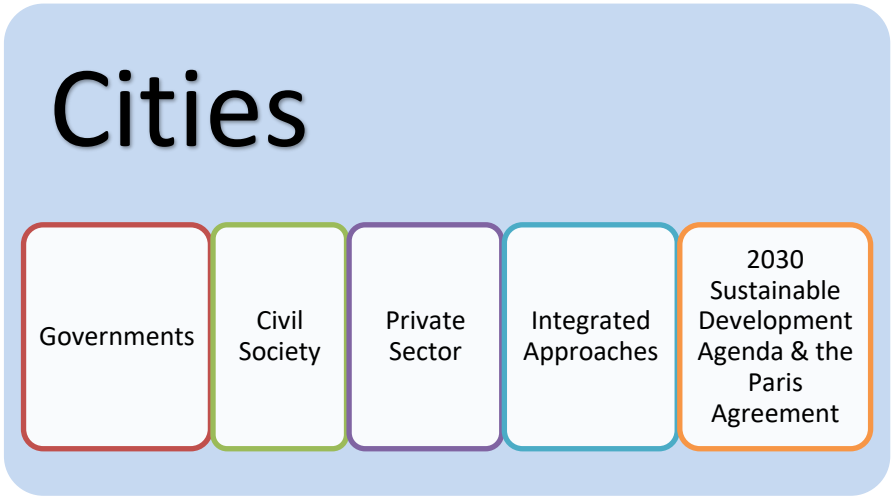

Figure 2: Integral Components for Sustainable Cities

In conclusion, the policy brief highlights how cities should strive to build resilience to climate change through integrated approaches, which incorporate undertaking risk assessments and developing emergency preparedness plans. In addition, given the shortage of public funds, cities must increase their ability to attract private investment to climate-resilient urban infrastructure projects. City-level action must also be supported by national policies enabling cities access to sufficient resources and knowledge and guaranteeing sufficient coordination between city administrations and regional/national authorities. It is necessary to strengthen climate-resilient development in urban landscapes using a Water-Energy Nexus approach. The interdependencies and trade-offs between natural resource availability and demands on water and energy across different sectors in urban areas should be taken into account to ensure the resilience of cities

3.2 Policy Brief #9: Innovative Climate Financing Instruments

Climate financing is one of the central elements in scaling up efforts towards sustainable development and ensuring the achievement of goals set out by the Paris Agreement. Private investment continues to account for the major share of climate investments. Although more public funds as well as private funds are being allocated, the High-Level Political Forum on Sustainable Development (HLPF 2019) stressed that global response to implementing the Sustainable Development Goals has not been ambitious enough. More advanced action and deeper commitment are required to be able to deliver the SDGs in time. Despite the progress made since 2015 toward achieving the Sustainable Development Goals, critical investments remain outstanding. While there is an emerging need to put climate financing at the top of the political agenda, this has to be carried out in balance with other pressing issues, such as the effects of climate change, a reduced pace of economic growth, the threat of a further decline in the economy, while responding to the realities of a changing global landscape.

However, the responsibility to achieve the goals of 2030 Agenda for Sustainable Development lies not only with governments, but also with the private sector, civil society and other actors. Only enhanced cooperation between parties can adequately address cross-cutting issues. New business models, community empowerment, collaborative engagement of multiple stakeholders, awareness raising, as well as new financial and institutional mechanisms are needed to adequately address the energy and climate challenges. Participation of institutions based in developing countries that promote the wellbeing of women in the design and implementation of projects as well as decision-making processes, capacity-building, education and public awareness, particularly at local level are necessary to achieve the SDGs.

The GFSE Policy Brief #9 looks at examples of innovative climate financing instruments and how they allow for increased long-term sustainability of public investment, since they can be more easily tailored and adapted to local and regional circumstances. The policy brief goes on to explore how these instruments can help unlock other public and private sector resources through co-financing, something that cannot be done as easily with traditional financial instruments, and explores the gender-climate nexus in more depth.

Women make up the majority of the world's population living in poverty and without access to electricity and clean cooking facilities. As a result, climate change has a disproportionate impact on their well-being due to existing norms and traditions. Given their traditional roles and responsibilities (e.g. primary family caretaker), women's livelihoods tend to be more reliant on natural resources and therefore on climate sensitive sectors, such as agriculture, forestry and water. Despite some progress made in closing the gender gap, stark gender disparities remain in economic, social and political areas. Though the important role of women is largely being politically acknowledged, a lot of new climate mitigation policies entering into force fail to address the gender angle. This makes future considerations of gender equality and its integration in climate change mitigation and adaptation is essential. A very important area is the necessity of promoting reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance and natural resources, in accordance with national laws. Part of the solution is the facilitation of gender-responsive approaches, which dissolve the restrictions on women's land ownership and their lack of access to financial resources and technologies. Climate financing mechanisms that leverage empowerment and gender equality can enhance the climate response effort, while simultaneously improving women's lives and making it more effective. The adoption of concrete targets for scaling up dedicated funding for gender and climate change is needed.

The policy brief concludes that though more attention is now being paid to climate finance in general, a rapid scale-up of finance for climate mitigation and adaptation projects are needed bridge the financing gap. Most of this financing will need to come from the private sector due to the budget shortages of the public sector. Early dialogue with the private financiers in the initial stages of a project would greatly help to define the project goals to

minimize potential risks. Careful consideration should be given to select instruments to target the aforementioned risks and to assess at which stage public or private financing is needed/ most suitable.

It is necessary to make good use of national-level climate finance mechanisms and ensure they are addressing climate change in a gender-sensitive way. Donors should improve their support to locally-led action on gender and climate change. Incorporating gender awareness and gender criteria into climate financing mechanisms and strategies is a smart strategy to make climate finance more effective. This is relevant for both adaptation and mitigation financing. It is necessary to set gender-responsive budgets for development cooperation projects. The budget for these projects should be assigned taking into account clear gender criteria, if applicable, that assess the potential impact of expenditures on women. This would help creating more equitable delivery of development cooperation projects in the field. In addition, in order to properly assess the impacts of projects on gender equality, explicit gender criteria in performance objectives and results measurement frameworks and for the evaluation of funding options are necessary.

Attention should be given to determine how actors in the field interact with one another and which factors influence the level of interaction. Such an assessment can help streamline efforts related to climate mitigation and adaptation on the international level. Finally, governments should develop clear, long-term and coherent regulatory frameworks to underpin sustainable growth and provide investors with more investment stability.

3.3 Policy Brief #10: Digital Solutions and Knowledge Transfer for Energy, Water and Agriculture

The GFSE Policy Brief #10 explores the benefits that digitalization can bring to solve the existing energy, water and agriculture challenges with a focus on possibilities for knowledge transfer. By looking at opportunities of integrating digital technologies in the three above-mentioned sectors, the GFSE policy brief draws attention to the benefits of using artificial intelligence in e-learning, in building energy management systems, and the advantages and disadvantages of information and communication technologies in general:

Decarbonization, decentralization and digitalization are rapidly transforming the energy sector. Energy systems, which are increasingly based on a combination of decentralized renewable energy, energy efficiency, communication and information technologies, and smart and flexible infrastructure are materializing. These emerging energy systems have the potential to empower new entrants and prosumers, substantially decrease GHG emissions and enable access to clean energy for low-income populations, among others. New energy and digitalization technologies are changing markets and thus allowing the emergence of new business models for energy services and industrial activities. However, companies in the decentralized renewable energy business in developing countries face barriers to access technology as well as finance. They often also lack business and technical skills. Digital

innovations are well-poised to help provide more affordable and accessible renewable energy and energy efficiency services to a wide range of consumers. As such, the energy sector will continue to be largely shaped by digital transformations going forward. Digitalization is currently facilitating a smooth integration of renewable energy sources and could also facilitate the implementation of improved energy efficiency services particularly in the built environment. Using these new technologies requires skills, knowledge and of course the respective infrastructure. Integrated approaches to capacity building are necessary, which cover different actors from governments to entrepreneurs, technical professionals and civil society, and address different segments of the value chain to foster networked entrepreneurial ecosystems.

The GFSE policy brief further provides a brief overview of some emerging digital developments and a number of initiatives that use digital technologies to stimulate knowledge transfer especially related to climate change. It concludes with the following statements:

Clean technology allows for a paradigm change as it enables pursuing industrial development and achieving structural transformation with a reduced environmental footprint, higher resource efficiency, reduced waste and lower GHG emissions. Digitalisation can contribute to better advance decarbonisation and lessen climate change impacts in the energy, water and agriculture sectors. In addition, digital solutions can support the knowledge transfer required for the effective deployment of low greenhouse gas emission, climate resilient technologies in these sectors and materialise the nexus approach, which takes into account interlinkages between them. For instance, digitalisation can lead to enhancements in the ability to collect and analyse relevant data to better coordinate planning, investment and operative decisions across sectors. In its turn, capacity building and knowledge transfer about digital solutions is necessary.

For inclusive and sustainable development to materialize in developing and emerging countries, a healthy entrepreneurial ecosystem in the fields of clean energy, sustainable water and agriculture technologies is necessary. For a clean technology entrepreneurial ecosystem to thrive, governments must develop supporting policies nurturing enterprises, building markets, introducing technology performance standards, strengthening capabilities, removing infrastructural bottlenecks, and providing finance. Moreover, instruments in these areas must be properly interlinked to effectively nurture entrepreneurial ecosystems for climate, clean energy and sustainable water and agriculture (nexus) technologies.

Developing and emerging countries experience significant barriers with the transfer and uptake of climate technologies and thus have to rely predominantly on the help from more developed countries. In order to deploy zero and low-GHG emission innovations, technology adsorption capacity must be substantially incremented and a large range of non-technical barriers need to be overcome, including behavioural and acceptance hurdles. Building up the necessary structures requires substantial knowledge transfer in all of these areas and solutions that allow connecting people with each other through networks. Digital solutions can contribute to improve knowledge transfer between actors and bringing them

together for the development and implementation of holistic solutions for clean energy, water and agriculture independently of their geographical location.

The number of e-learning tools and digital platforms implemented in crucial sectors of developing countries can be used to bridge the gap and tackle barriers by transferring knowledge, supporting project development and enabling business deals to materialise. Information and communication technologies can facilitate the global energy transition, the advancement of sustainable agriculture and sustainable water resources management and the shift to a circular economy. Besides the possibility of enhancing knowledge transfer, digitalisation has the potential to enhance the impact of clean technologies in the domains of energy, water and agriculture, making them more flexible, tailored to local needs and enabling innovative business models. The Global Forum on Sustainable Energy (GFSE) can play an important role in this regard by furthering the international discourse and information dissemination on sustainable energy and climate change solutions.

3.4 Policy Brief #11: Engaging Citizens via Social Innovations for the Energy Transition

The GFSE Policy Brief #11 looks at how social innovations can help tackle a number of environmental and energy challenges, especially in those areas where they also have social repurcussions (ex. health issues due to air pollution or resource depletion). The energy transition has already given rise to various forms of social innovation, including energy cooperatives, energy "prosumers" consuming and producing energy, shared mobility platforms, living labs and citizens‘ engagement initiatives. They are linked to new business models, participatory governance approaches, and innovative financing schemes, among others. They can contribute to making energy more sustainable, democratic, affordable and thus advance structural energy system transformations by putting people at their center. Social innovations are also useful in generating income for local communities and keeping money flows in local economies. Additionally, social innovations have a multi-actor nature, involving contributions from consumers, citizens and organisations beyond typical energy suppliers.

In order to gain a better understanding of such innovations, the GFSE Policy Brief examines some examples in the energy sector and, specifically, the enabling conditions that facilitate their emergence, their contribution to the development of new business models and greater acceptance of the transition towards low greenhouse gas emission, climate resilient energy systems.

One emerging innovational concept is a renewable energy community or a citizen energy community. Renewable energy communities based on open participation, which produce, consume, store, sell and share renewable energy, can make a significant contribution to the achivement of renewable energy targets. They foster citizen´s participation and empowerment in decision-making in the renewable energy field. Energy communities can be an effective tool to increase public acceptance of new projects and mobilise private capital for

the energy transition. Energy communities can also be a tool to increase flexibility in the energy market.

The energy transition and climate action require considerable changes in the behaviour of individuals, communities and public and private organisations, for instance related to energy and resource consumption. Addressing these issues requires research and experimentation on behavioural, social and cultural change. One of the vehicles to address these issues are „Living Labs“, a further example of a type of social innovation, that is looked at in more detail within the scope of this policy brief. Living Labs represent new models of organizing collaborative innovation processes by involving diverse actors, such as citizens, research organisations, companies, cities and regions to test and validate innovations and/or to tackle current societal challenges. They focus on citizen engagement, iteration and self-reflective learning.Living Labs allow fostering innovation through the application of both local knowledge and scientific expert knowledge to real-world problems (e.g. energy use). Living Labs have been used, for instance, to examine everyday practices of people in their homes and related energy use (e.g. reducing laundry cycles, and lowering indoor temperature).

Energy systems are undergoing a significant transition and actors involved are changing their roles in the generation, transport, storage and consumption of energy. As part of this process, social innovations are emerging, which enable the participation of citizens in the energy transition in different forms and contexts. They are being used as means to achieve specific energy-related policy goals, for instance increasing social acceptance of new technologies and addressing neglected social dimensions of the energy transition. Various forms of participation – some of which were already described above - are emerging. It remains to be seen how social innovations will continue to shape the transformation of the energy transition.

4 Cooperation with Sustainable Energy for All (SEforALL), REEEP and other International Stakeholders

GFSE acts as an information broker for Austrian stakeholders and enterprises in the energy and related sectors about ongoing campaigns and programmes of SEforALL, REEEP, UNIDO and other international stakeholders located in Vienna, Austria. GFSE regularly informs stakeholders in the energy sector about new publications and/or initiatives of these organisations through its newsletters and events.

The Sustainable Energy for All (SEforALL) Initiative creates new opportunities for cooperation between international organizations, public institutions, academia, the private sector and civil society initiatives. GFSE actively supports the SEforALL Initiative by acting as a networking agent between international and national stakeholders, and thereby enabling future coopertion and information exchange processes. GFSE is in regular contact with representatives of SEforALL and pinpoints current possibilities for cooperation. A representative of SEforALL took part in the panel discussion during the GFSE Expert Workshop on Sustainable Cities (see 2.1).

The Renewable Energy and Energy Efficiency Partnership (REEEP) is another important cooperation partner of GFSE. REEEP is regularly invited to contribute articles on its initiatives for the GFSE website and also regularly attends GFSE events. Additionally, GFSE disseminates information on REEEP's activities through its bi-annual newsletter.

As was the case with previous Vienna Energy Forums, the Global Forum on Sustainable Energy was also a partner and working group member of the Vienna Energy Forum 2020. Leading up to the VEF2020, the GFSE provided inputs to the preliminary speakers, contributed actively on the creation of the concept note, and helped the coordination activities between the Austrian stakeholders. The Vienna Energy Forum 2020 on the topic of "The Fourth Industrial Revolution as a catalyst for energy transition" had to be postponed to 2021 (6 – 7 July) in light of the COVID-19 global health crisis. GFSE continues to be an active member of the working group to aid the co-organizers in planning the VEF2021.

For more information on the Vienna Energy Forum, please check out the conference website at https://www.viennaenergyforum.org/.

5 Information and Dissemination Activities

The website of the Global Forum on Sustainable Energy (www.gfse.at) serves to inform national and international stakeholders about latest developments, initiatives and events regarding the global efforts to develop a sustainable energy system and ensure universal energy access, about activities of GFSE and important publications. Important news, such as the yearly launches of the REN21 Global Status Report, the outcomes of important international events, such as the conclusions of the COP25 in Madrid in December 2019, and interesting studies related to the interlinkages between gender and energy are regularly published on the cover page in the form of newsbuttons.

The GFSE website features top news on its cover page, an introduction to GFSE, its main activities over the years, and a service section. With its bi-annual newsletter, GFSE updates interested followers on recent events, policy developments and other topics ranking high on the development agenda. Furthermore, the website provides the possibility to institutions and organisations to promote their own sustainable energy events, which are incorporated into the event calendar. A selection of relevant links displays the global network of GFSE and might act as a starting point for research on sustainable energy topics or potential partner institutions.

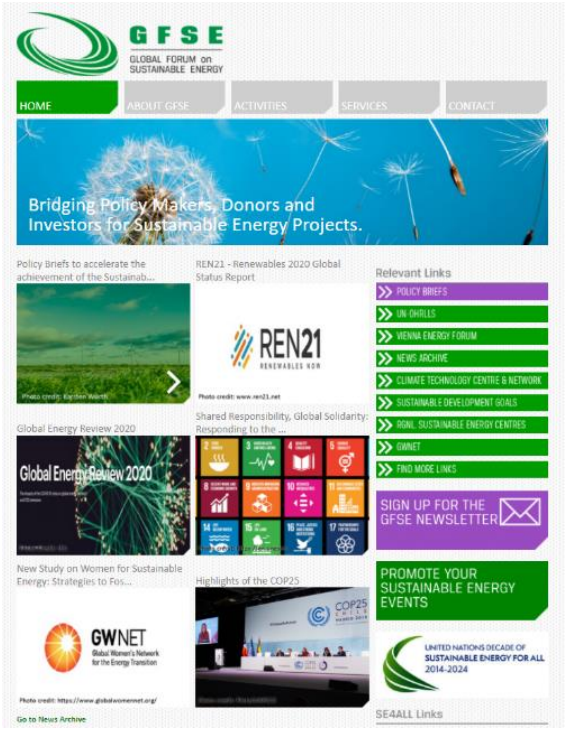

Figure 3: Homepage Snapshot of the Global Forum on Sustainable Energy

All GFSE news and newsletters are available on our website.

6 Additional GFSE Networking and Outreach Activities

Since late 2012, GFSE is a member of the global network REN21 as a non-governmental organisation, and GFSE-President Irene Giner-Reichl has been acting as one of the REN21 vice-chairs since January 2013. GFSE actively participates in networking and outreach activities of REN21, notably through supporting the launch of the Global Status Reports (GSR) through various PR-activities and by providing inputs to the regular REN21 newsletters.

In her capacity as GFSE-President and Vice-President of REN21, Irene Giner-Reichl dedicates herself to promoting the three goals of Sustainable Energy for All. She i.a. facilitated a conference, co-sponsored by REN21 and the University of Sao Paulo, in June 2019 to launch the GSR 2019 and spoke at the Global Wind Energy Conference in November 2019 in Rio de Janeiro, two opportunities to expand the GFSE's network into Latin America.

Furthermore, she moderated the elaboration of the Declaration that was adopted by consensus at the Seoul Korea International Conference on Renewables in October of 2019[1].

Through her endeavours, a fruitful cooperation was initiated with the Latin America Chapter of R20 Regions of Climate Action: it resulted in a series of webinars on the opportunities presented by sustainable energy transitions; the on-line launching of the GSR 2020 in July 2020; and the start of a cooperation between the Austrian Energy Agency (AEA) and a consortium of Brazilian municipalities on solid waste issues. A cooperation to foster renewable energy in remote areas of the Brazilian Amazon has also been initiated.

Ambassador Irene Giner-Reichl contributes to DESA on-line consultations on sustainable energy at the UN General Assembly, the VEF working groups and on-line fora. She was also a featured speaker at the ReEnergy Africa E-Summit on 22-23 October 2020[2].

[1] http://www.ren21.net/irek-2019/

[2] https://www.reenergyafrica.org/event/917b0644-635f-483c-bb4b-ec15f07444f1/summary

7 GFSE Association

The Global Forum on Sustainable Energy is a non-profit association established within the Austrian legal framework.

The Austrian Energy Agency hosts the secretariat of the GFSE and manages the activities of the association. These include care of members, collection of membership fees, management of the financial account in coordination with the responsible bodies of the association, organisation of the general assembly and further tasks as required.

The general assembly convenes once per year after the preparation of annual accounts and successful internal financial audit. The meeting is facilitated and summoned by the Austrian Energy Agency in coordination with the board of the GFSE. The Austrian Energy Agency prepares all documents for the general assembly meetings and ensures the timely execution of the internal financial audit.

Two general assembly meetings, in September 2019 and in October 2020, were held during the contract period.

8 Outlook on Future GFSE Activities

COVID-19 has led to a global economic recession, hitting the poorest population the hardest, with a subsequent increase in unemployment rates, poverty levels and related health risks. The pandemic is deepening pre-existing inequalities, exposing vulnerabilities in social, political and economic systems. However, the pandemic has also shown opportunities for a transformation towards sustainable development. In the aftermath of the global COVID-19 health crisis, countries are going to have to look at innovative ways of stimulating the economy, while promoting an overall green recovery[3]. Some countries have already taken the necessary steps to address concerns by passing stimulus packages supporting key sectors and by focusing on environmental protection measures. Other countries are turning their attention to climate mitigation and adaptation efforts promoting, for example, subsidized insulation and heating retrofits to help low-income households affected by energy poverty, or by banning the use of oil-based heating systems. However, a number of countries are still favouring fossil energy over clean energy in their recovery packages. Thus, efforts to promote the multiple benefits of renewable energy and energy efficiency and the opportunities they offer for a global transformation towards sustainable, resilient and affordable energy systems must be increased. Renewable energy and energy efficiency can significantly contribute to foster socio-economic development, generate jobs, reduce air pollution, curb GHG emissions and improve healthcare services, among others.

For example, local value chains for renewable energy and energy efficiency provide opportunities for youth and women, who have been been significantly affected by the COVID-19 crisis. Supporting them to develop marketable green skills for the clean energy transformation is necessary to increase the capacity of developing countries to adsorb sustainable energy technologies.[4] Regional and national initiatives to develop skills and create jobs for the youth and women should be pursued vigorously, through collaboration between the private sector and educational institutions and improvements in the quality and accessibility of training, among others through digital knowledge transfer platforms.

Citizen's engagement is essential to advance the transformation of energy systems not only through involvement of citizens in development and implementation of policies but also through renewable energy communities, living labs, citizen science, crowdfunding and other initiatives. Social innovations that enable citizen's engagement are emerging, contributing to advance the transformation towards a decentralised, democratic energy system. For example, renewable energy communities are emerging, which allow citizens to

[3] https://www.carbonbrief.org/coronavirus-tracking-how-the-worlds-green-recovery-plans-aim-to-cut-emissions
[4] Global Forum on Sustainable Energy, 2020: Digital Solutions and Knowledge Transfer for Energy, Water and Agriculture. Vienna, Austria. Policy Brief #10. August, 2020. https://www.gfse.at/fileadmin/files/Services___Policy_Briefs/GFSE_Policy_Brief__10_Digital_Solutions_and_Knowledge_Transfer_for_Energy__Water_and_Agriculture.pdf

have control over energy investments by becoming co-owners of renewable plants and enabling local retention of added value.[5]

The Global Forum on Sustainable Energy will continue to play an important role in bringing Austrian and international experts from a wide variety of fields related to sustainable energy and climate protection together. Thereby, GFSE will continue to highlight the potential of renewable energy and energy efficiency solutions, as well as related policies and business models. As it has done in the past, GFSE will ensure that a lively platform exists for the exchange of diverse experience and for capacity building, especially for the establishment of a sustainable energy system in developing and emerging countries. Through the organization of expert workshops and the involvement in working group meetings for the Vienna Energy Forum, GFSE is constantly on the forefront of the discourse related to the energy transition. The Vienna Energy Forum (VEF) — to be held in 6-7 July 2021 — will facilitate a multi-sectorial, multi-stakeholder and inter-disciplinary dialogue on sustainable energy for inclusive development and productive capacities, with specific focus on industry, food systems and products.[6] It will also contribute to the High Level Dialogue on Energy (HLDE) under the auspices of the UN General Assembly.

Virtual communication via online platforms, previously relatively uncommon in the day-to-day business world, and webinars are the new norm in the post-COVID-19 world. Stakeholders are now exploring ways to drawing more people together via these information and communication technology tools. By publishing and disseminating policy briefs and holding virtual meetings on key topics, including citizen engagement, financing instruments, business models, green energy skills for the youth, and the interface between development cooperation and energy and climate policies, GFSE helps to bridge the gap between decision-makers and sustainability experts around the world. As such, the Global Forum on Sustainable Energy will continue its successful cooperation with the Sustainable Energy for All Initiative (SEforALL), REN21, REEEP, the Global Women´s Network for the Energy Transition (GWNET) and the Global Network of Regional Energy Centres (GN-SEC), while also intensifying cooperation with other stakeholders in the climate protection, energy, developmental and related sectors.

[5] Global Forum on Sustainable Energy, 2020: Engaging Citizens via Social Innovations for the Energy Transition. Vienna, Austria. Policy Brief #11. October, 2020.
[6] https://www.viennaenergyforum.org/

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