



### SUMMARY OF THE IRENA RENEWABLE ENERGY JOBS CONFERENCE: 21 JANUARY 2014

The Renewable Energy Jobs Conference, organized by the International Renewable Energy Agency (IRENA), took place on Tuesday, 21 January 2014, in Abu Dhabi, United Arab Emirates (UAE), in connection with the World Future Energy Summit. The Conference discussed how the renewables sector has become a significant employer with potential for creating millions more jobs worldwide in coming years. It was an opportunity for experts and policy makers to share knowledge, experiences and best practices on renewable energy job creation. In closing the Conference, Hugo Lucas, IRENA, stressed the importance of more awareness, social support and active people to drive the renewable energy transition and concluded that he is “really proud” to speak at the first IRENA conference focusing on people.

#### WELCOMING REMARKS

On Tuesday morning, IRENA Director-General Adnan Amin welcomed delegates to the first ever Renewable Energy Jobs Conference.

Suhail Mohammed Al Mazrouei, Minister of Energy, UAE, confirmed UAE’s commitment to sustainable development and clean energy solutions. He highlighted the world’s recovery from the economic crisis as an opportunity to increase employment in the renewable energy sector.

Liu Qi, Chinese National Energy Administration, underscored China’s commitment to creating jobs in the renewable energy sector, supported by training courses at colleges, universities and energy companies.

Abderrahim El Hafidi, Ministry of Energy, Mines, Water and the Environment, Morocco, highlighted Morocco’s legal and regulatory frameworks supporting renewable energy investments, and job-creation in the investment, implementation and maintenance of renewable energy.



Adnan Amin, IRENA Director-General



Suhail Mohammed Al Mazrouei, Minister of Energy, UAE

Karsten Sach, German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, described the renewable energy job sector as highly diverse, including academic, engineering, technical, operative and maintenance jobs.

Francesco Starace, Enel Green Power, referred to the renewable energy jobs sector as a global competitive industry, including a mix of different sectors and a focus on entrepreneurship.



Karsten Sach, German Federal Minister for the Environment, Nature Conservation and Nuclear Safety

**KEYNOTE SPEECH:** IRENA Director-General Amin commended IRENA’s Renewable Energy Jobs Report as a benchmark of employment opportunities, stating that there is “strong evidence” that renewable energy jobs have doubled in the last five years. Encouraging continued growth, he cautioned participants to be wary of “clouded messages” and competing narratives from the fossil fuel industry.

Director-General Amin identified the need for education and training programmes to facilitate local economic benefits and support women’s empowerment, and recommended collaboration with private actors to build on respective strengths. He highlighted that IRENA will provide a central depository of data to help public and private actors make informed policy choices “to explore tomorrow’s jobs, today.”

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The dais during the panel on global dynamics of renewable energy jobs. L-R: Ulrike Lehr, GWS Institute of Economic Structures Research; Michael Renner, Worldwatch Institute; Arthouros Zervos, Renewable Energy Policy Network for the 21<sup>st</sup> Century; Hugo Lucas, Director, Knowledge, Policy and Finance Centre, IRENA; Marlene O'Sullivan, German Aerospace Center; and Francesco Starace, CEO, ENEL Green Power.

### **RENEWABLE ENERGY JOBS – GLOBAL DYNAMICS**

The session “Renewable energy jobs – global dynamics” took place on Tuesday morning, facilitated by Ulrike Lehr, GWS Institute of Economic Structures Research.

Michael Renner, Worldwatch Institute, argued that achieving a green clean economy is possible with the involvement of skilled and motivated individuals. Referencing the IRENA Renewable Energy and Jobs Report, he cited rapid development in the last decade, notably in wind and solar photovoltaic. He compared experiences in Germany, Spain and the US to illustrate impacts of policy frameworks. For future research, he supported *inter alia*: standardized methodology to support macroeconomic studies; systematic industry surveys to develop disaggregated information; and continued collection of data on gender issues.

During panel discussion, Francesco Starace, ENEL Green Power, voiced a lack of concern for overcapacity, considering it a natural aspect of an evolving industry.

Arthouros Zervos, Renewable Energy Policy Network for the 21<sup>st</sup> Century, dissected the cause of overcapacity, pointing to unstable policy frameworks as a major influence. Renner raised the issue of domestic demand as an important aspect of overcapacity.

On value chains, Starace drew attention to the lack of success from state intervention and proposed avoiding that approach. Zervos noted that the opportunity for government intervention could be in capacity-building to sustain employment growth.

Marlene O'Sullivan, German Aerospace Center, underscored the value for job-creation in operations and maintenance, noting localized opportunities in regionally-specific technologies and installation needs, such as with mountain solar PV. Hugo Lucas, IRENA, noted high interest among the private sector to source locally.

On conditions for positive policies to maximize social economic benefits of renewable energy deployment, Zervos suggested that governments set targets, with identified instruments to reach them, in order to deliver stable political frameworks. O'Sullivan underscored the value of human resources, calling on policies to create long-term stability.

Starace added the role of trust and the need for not only policies, but guidance on how these policies evolve with technologies over time.

Lucas concluded that it is important to promote renewable energy for employment and energy security, and the pathway must include enabling environments created by governments.

### **ENABLING POLICIES FOR RENEWABLE ENERGY JOB CREATION**

The second session on enabling policies for renewable energy job creation was moderated by Martin Schöpe, German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety.

Rabia Ferroukhi, IRENA, presented IRENA's Renewable Energy and Jobs Report. She discussed a range of policies, including: deployment; research and development; education and training; and trade and investment policies to support the renewable energy job sector. She underscored that these policies are most effective when pursued in conjunction with each other and in the context of broader fiscal, industrial and labour policies. Ferroukhi highlighted several recommendations, *inter alia*: tailored policies adapted to country conditions; stable, predictable and adaptable policy frameworks that avoid abrupt changes; forward-looking education and training; and long-term strategies.

Wang Zhonging, Chinese National Renewable Energy Center, highlighted the rapid growth in China's renewable energy jobs market. He suggested strict environmental pollution policies that penalize the fossil fuel industry while facilitating growth in the renewable energy sector.

Ramon Mendez, Ministry of Industry, Energy and Mining, Uruguay, emphasized the need for long-term, stable and credible policies to facilitate economic and employment growth within a country's renewable energy sector.

Acknowledging that traditional renewable energy policies were not pursued to create jobs, but to ensure energy security and environmental protection, Matthew Kennedy, Renewable Energy Technology, International Energy Agency, stated that job creation has become a co-benefit of renewable energy policies. Emphasizing that countries should craft country-specific renewable energy policies, he presented Germany's



The dais during the panel on enabling policies for renewable energy job creation. L-R: Martin Schöpe, International Affairs of Renewable Energy, German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety; Rabia Ferroukhi, IRENA; Matthew Kennedy, Renewable Energy Technology, International Energy Agency; Georgeta Vidican, German Development Institute; Wang Zhongying, Director, Chinese National Renewable Energy Center; Ramon Mendez, Ministry of Industry, Energy and Mining, Uruguay; and Tim Richards, Managing Director, Government Affairs and Policy, General Electric Middle East, North Africa and Turkey.

concentrated growth in the Rhine region; Canada's focus on attracting foreign direct investment; and Ireland's focus on smart-grid solutions.

Tim Richards, General Electric, underscored that good policy creates profitable investment, leading to job creation. Noting that the fossil fuel industry has benefitted from a century of energy policies supporting fossil fuel development, he reiterated the need for long-term policy continuity to facilitate growth of the renewable energy market, and "technology neutral" policies which do not benefit one renewable over another.

Georgeta Vidican, German Development Institute, called on governments to set the right incentives to internalize environmental costs and thereby benefit the renewable energy industry.

Panelists addressed how to scale up international cooperation with public and private actors to create a critical mass and encourage job growth. Delegates lauded the Renewable Energy Jobs Conference as a means to do so, and called on IRENA to share information among stakeholders.

### **RENEWABLE ENERGY SKILLS, OCCUPATIONS, EDUCATION AND TRAINING**

The session on renewable energy skills, occupations, education and training was moderated by IRENA Deputy Director-General Frank Wouters.

Hugo Lucas, IRENA, described the pattern of "borrowing" professionals from other industries as a risky one, pointing to efforts to develop a labor pool with IRENA Renewable Energy Learning Partnership. Describing barriers, he offered an example from Africa where there is great potential for geothermal power, but opportunities are lacking for education in that technology. He shared recommendations for closing the skills gap, including: policy planning in advance through capacity assessments; harmonization of curriculum that incorporates technical and tertiary skills; and integrating renewable energy education into the elementary level.

During panel discussions, Paola Mazzucchelli, Association of European Renewable Energy Research Centres, described the need to continually evolve the master's programmes that have successfully graduated 500 students since 2002.



The dais during the panel on renewable energy skills, occupations, education and training. L-R: Frank Wouters, Deputy Director-General, IRENA; Paola Mazzucchelli, Secretary General, The Association of European Renewable Energy Research Centres; Olga Striestka-Illina, International Labour Organization; Kristian Petrick, Consultant, All Green Energies and IEA-RETD; Ali Askar Sher Mohamad, Sustainable Energy Development Agency, Malaysia; Gerard McGovern, Quality Manager, BZEE Academy; and Axel von Perfall, Managing Director, Alingho.



The dais during the panel on job creation in the context of energy access and the gender dimension of renewable energy. L-R: Ben Good, CEO, Global Village Energy Partnership International; Soma Dutta, ENERGIA; Dipal Chandra Barua, Grameen Bank; Dominique Lallement, Consultant; Jesca Eriyo, East African Community; Harish Hande, Selco; and Adil Najam, Boston University.

Olga Striestka-Ilina, International Labour Organization, explained that skill shortages are appearing across sectors, further adding pressure and competition. She drew attention to the lack of classification systems that challenge successful modeling for accurate data to inform education institutions of where the demand lies. She noted the need for improved leadership skills in renewable energy training.

Kristian Petrick, All Green Energies and IEA Renewable Energy Technology Deployment, emphasized the influence of policies on the demand for jobs and education.

Gerard McGovern, BZEE Academy, identified infrastructure education as an additional challenge, explaining that students do not have access to the necessary hardware and training sequences to develop their expertise; and calling for coherent qualification frameworks that are transnational, such as standardized accreditation.

Ali Askar Sher Mohamad, Sustainable Energy Development Authority, Malaysia, acknowledged the benefit of having had experience with renewable energy to be able to influence the development of policy, noting the importance of capacity building.

Axel von Perfall, ALINGHO, indicated that while corporations are seeking technical skills, they are also requiring experience in sales and marketing, as well as project management.

On providing advice to inform IRENA, Petrick suggested coordinating platforms that join the public sector and education at the international level as well as the national level. Mohamad requested that IRENA work with specialists to produce training syllabi and offer workshops to member countries. McGovern proposed establishing a uniform language for a qualification framework and von Perfall requested extending the invitation to corporations to join in future Job Conferences for a more integrated panel.

### ***JOB CREATION IN THE CONTEXT OF ENERGY ACCESS AND THE GENDER DIMENSION OF RENEWABLE ENERGY***

The session on job creation in the context of energy access and the gender dimension of renewable energy employment was moderated by Ben Good, Global Village Energy Partnership International.

Soma Dutta, ENERGIA, noted that roughly 70% of the 1.3 billion people without electricity are women and emphasized that off-grid renewable energy access can improve universal energy access and facilitate rural job creation, in particular for women. She highlighted key themes, *inter alia*: decentralized renewable energy is key to achieving universal energy access; the need for dedicated off-grid and long-term renewable energy policies; energy provision goes beyond basic needs, can improve income, including microenterprises for rural economies; and the need for a better understanding of the employment-generation impacts, suggesting this as a focal area for IRENA.

Acknowledging that in Bangladesh, roughly half of the population is without electricity, Dipal Chandra Barua, Grameen Bank, discussed projects to improve decentralized solar and biogas systems. He stressed involving women in installation and maintenance, while emphasizing the need for supportive policies and financing schemes to expand such initiatives.

Harish Hande, Selco, challenged participants to move away from the gender issue focusing only on small gains, such as improvements in cooking technology or micro-businesses, and to take a more holistic and long-term approach considering gender balance in the development of renewable energy technology and policy.

Jesca Eriyo, East Africa Community, commented that in Africa, household cooking remains a “job for the women” while a growing number of girls are going to school, studying engineering and policy-making. She challenged policymakers to provide the right policies focused on renewable energy and expand gender-balanced employment, while emphasizing that energy access not only creates jobs in the renewable energy sector, but opens jobs access wherever energy is granted.

Adil Najam, Boston University, underscored that it is not just about having electricity connection, but having electricity access. He suggested that energy access can be improved through a diversity of renewable energies.

Discussing entrepreneurial capacity, Dominique Lallement, consultant, stated that improved energy access can finance entrepreneurship and the scaling up of small businesses, while emphasizing that skill transfer programmes should be catered to specific audiences.



The dais during the panel on socio-economic benefits of renewable energy deployment in the Gulf Cooperation Council. L-R: Rabia Ferroukhi, IRENA; Roula Majdalani, Director, Sustainable Development and Productivity, UNESCWA; Ibrahim Babelli, Chief Strategist, K.A. CARE; Thani Al Zayoudi, Ministry of Foreign Affairs, UAE; Paddy Padmanathan, President and CEO, ACWA Power; and Ahmed Nada, Vice President of Business Development for the Middle East, First Solar.

Panelists also addressed, *inter alia*: encouraging holistic thinking about renewable energy systems; identifying policy gaps and fixing them; reducing fragmented data; and remembering that gender is both women and men.

### **SOCIO-ECONOMIC BENEFITS OF RENEWABLE ENERGY DEPLOYMENT IN THE GULF COOPERATION COUNCIL**

The session on socio-economic benefits of renewable energy deployment in the Gulf Cooperation Council (GCC) was moderated by Rabia Ferroukh, IRENA.

Roula Majdalani, UN Economic and Social Commission for Western Asia (UNESCWA), explained that although the GCC region is rich in oil, there are many reasons for the deployment of renewable energy, including: energy security; climate change mitigation; integrated natural resource management; and job creation. She specified that the existing population growth, urbanization and high standards of living would lead to increased demands on water and energy. She concluded by noting the opportunities for decentralization through public and private partnerships.

Ibrahim Babelli, King Abdullah City for Atomic Renewable Energy, discussed challenges in the employment situation in the GCC countries, impacted by a period of low-cost oil extraction that provided a large amount of money and thus created narrow margins for employment opportunities. He called for ambition-driven strategies that set sequential

paths with regular assessments, applauding the “pathmakers” like the UAE. He stressed the need for a paradigm shift related to energy security that will usher in localized value chains.

Thani Al Zayoudi, Ministry of Foreign Affairs, UAE, shared perspectives from successfully developing renewable energy in the region, attracting young nationals and sustaining education to promote skilled human capital.

Paddy Padmanathan, ACWA Power, provided practical examples demonstrating that technology and innovation are ahead of policy. He explained that the public sector would invest in the knowledge sector if there were transparency and policy certainty.

Ahmed Nada, First Solar, discussed the importance of localizing the value chain. He urged for speed in deployment of programmes and policies in order to support renewable energy applications.

### **CONCLUDING REMARKS AND THE WAY FORWARD**

Hugo Lucas, IRENA, emphasized that “we are in a renewable energy transition” and private companies that do not see this risk being out of business like Kodak who did not see digital cameras and Nokia that did not see smart phones coming. He stressed the importance of more awareness, social support and active people to drive the transition and concluded that he is “really proud” to speak at the first IRENA conference focusing on people.



A panoramic view of the Abu Dhabi National Exhibition Centre, venue of the World Future Energy Summit and the Renewable Energy Jobs Conference.