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outreach
on climate change and sustainable development

RENEWABLE ENERGY POTENTIAL IN THE GULF STATES

As the host of the World Future Energy Summit (WFES) and home of the International Renewable Energy Agency (IRENA), the United Arab Emirates (UAE) is positioning itself as an important player in the world of renewable energy. The UAE, along with the five other states that make up the Gulf Cooperation Council (GCC), can guarantee the regular strong sunshine necessary for large scale solar energy generation, and also possess ample space for, and conditions conductive, to wind farms. Furthermore, in a time of global economic downturn, few other states can rival the vast financial resources at the disposal of the GCC, seeing them well placed to invest in the development and implementation of renewable technologies.

Exhibition stands at the World Future Energy Summit, held in Abu Dhabi, 15 – 17 January 2013

This is, however, only part of the picture. GCC members produce and consume vast amounts of heavily subsidised oil and gas; a source of great wealth but also a direct barrier to transitions to renewable energy. This applies for both these nations and the large number of other countries whose economies (and societies) are built upon the consumption of fossil fuels. All GCC states feature in the top 14 per capita emitters of carbon dioxide in the world, therefore also providing cause for environmental concern at the national, regional and global level.

Nonetheless, there are some positive signs that attitudes and approaches to energy within the GCC are starting to change. With per capita energy consumption in the GCC twice as high as the European average, coupled with increasing energy demand from growing populations, these nations now see renewables as an essential means of protecting their oil and gas reserves. Moreover, with one third of the oil produced by Saudi Arabia being used to meet the domestic demand for energy, for example, there are economic, environmental and resource security drivers for the up-scaling of renewables. This shift is also being facilitated by the fact renewables like wind and solar are becoming more cost effective in their own right, with technological advances enabling larger outputs at lower costs, thereby making them more attractive to both public and private investors in the region. It is therefore no surprise that we are seeing a trend for increasingly ambitious renewables projects across the GCC.

All GCC states have now introduced clean energy targets – for example, last week Saudi Arabia stated its intention to have a 54GW renewable energy output by 2032, and the UAE is aiming to have 7% of Abu Dhabi's energy coming from renewable sources by 2020. Yet, whilst representing positive statements of intent from these governments, reaching these targets will be dependent upon the far trickier processes of developing new policy frameworks – including the eventual phase out of fossil fuel subsidies, which massively distort the energy market and therefore also investment choices, despite the GCC's comparative advantage for solar energy in particular.

Developing and utilising dynamic knowledge about the renewables resources and capacities available to the GCC countries will be essential to their up-scaling of green energy, a process which will be greatly aided by initiatives such as IRENA's Renewables Readiness Assessment (RRA); something discussed by representatives

from the GCC and other stakeholders in detail during an IRENA side event at the World Future Energy Summit (WFES) last week. IRENA is currently conducting an RRA with the Government of Oman, with a view to the country devising a Renewable Energy Roadmap which will lay out the policies and required infrastructure necessary to reach its national renewable targets. In a region where the current development path is based almost entirely upon fossil fuels, the information provided by IRENA will be crucial to persuading both decision-makers to implement renewable energy strategies and the public to change consumption trends.

Raymond Nurse from Grenada's Ministry of Finance, Planning, Economy and Cooperatives speaking at IRENA's side event on Renewables Readiness Assessments at the WFES

One of the myriad advantages of increasing the proportion of renewables in the region's energy mix is the enormous opportunity for research and development (R&D) in solar, which, despite recent advances is still less able to compete with fossil fuels on pure economic terms than wind power, due to difficulties with achieving scale and storage of the power produced. New technologies developed and tested in the GCC will serve to increase the efficiency and scalability of solar (and other renewables), thereby reducing costs whilst also increasing the potential for the energy produced to be exported to neighbouring regions. Not only would this serve to create an environment more conducive to investment in renewables, the dissemination of renewable energy, expertise and technology could help diversify Gulf economies and provide vital new sources of revenue.

Creating the infrastructure required to scale up renewables projects and export the energy produced to other countries will nevertheless require coordination of strategy and integration of projects across the region. While this is perhaps one of the greatest challenges to be overcome, IRENA and other intergovernmental agencies are currently working closely with the GCC to maximise cooperation and the alignment of each member country's renewables plan. As all the panellists at an IRENA, World Wildlife Fund (WWF) and Emirates Wildlife Society (EWS) side event at WFES on green energy in the Gulf agreed, while there is indeed much work to be done, the region presents one of the most compelling cases for the further advancement of renewables.

RENEWABLES BECOMING MORE COMPETITIVE WORLDWIDE

Significant falls in the cost of renewable energy are making it competitive with fossil fuels in countries worldwide. The reduced costs of solar and wind, in particular, are changing the energy landscape dramatically, especially in remote areas, such as islands, where solar has become the most economic option for communities that are off-grid and rely predominantly on diesel generation for their energy needs.

The increased competitiveness of renewables is due to a combination of reduced technology costs and greater efficiency of equipment, as a result of rapid deployment, stimulated by support policies to overcome barriers.

These are the findings of the International Renewable Energy Agency (IRENA)'s new publication, Renewable Power Generation Costs in 2012: An Overview. The report – presented on the first day of the World Future Energy Summit (WFES), held in Abu Dhabi from 15-17 January – analyses 8,000 medium- to large-scale renewable power generation projects and is the most comprehensive analysis of the costs and performance of renewable power generation currently available.

According to the report, mature renewable technologies such as biomass, geothermal and hydropower remain the cheapest, but the costs of technologies such as solar photovoltaic (PV) modules – which have seen a 65-75% reducti on in the last two years – are becoming increasingly competitive.

IRENA analyst Michael Taylor presents Renewable Power Generation Costs 2012: An Overview

In the case of wind, equipment performance has improved – meaning that it is possible to harvest more energy for a given wind resource – and turbine costs have also come down. These advances mean that onshore wind is now competitive with fossil fuels in many countries and, in some cases, it is more economic than gas-fired generation – even in the age of cheap gas.

Further reductions are projected in the coming years. According to IRENA, to 2020 the rate of decline for solar PV costs is likely to be slower than in recent years, but concentrated solar power (CSP) and wind may see an acceleration. For example, the report shows that wind turbine costs in China are currently significantly (50-60%) cheaper than those produced in OECD (Organisation for Economic Co-operation and Development) countries, giving an indication of the additional cost reductions possible over the next few years.

In spite of these encouraging findings, renewable energy deployment continues to be hindered by the outdated public perception that renewables are not economically competitive against conventional energy solutions based on fossil fuels. The lack of cost data is a further obstacle to the expansion of renewable energy, as there is insufficient publically available data to enable policy makers to make robust decisions about the role of renewable power generation. IRENA's report and cost analysis programme go some way to addressing these barriers, but a dynamic and systemic collection of costs data is needed to analyse emerging trends and the challenges facing renewables.

IRENA's booth at the World Future Energy Summit

One area that needs further analysis is the balance of system costs. Speaking at a series of expert briefings on the costs of renewables – held at IRENA's booth throughout the WFES – IRENA analyst Michael Taylor highlighted the balance of system costs and operation and maintenance costs as an emerging issue for the next few years and emphasised that even if equipment costs continue to decrease, the reduction potential in overall costs will be limited if the balance of system costs is not addressed.

While these are significant challenges to overcome, IRENA's Renewable Costing Alliance – together with projects such as the Renewable Energy Data Collection Framework (REDAF), a joint initiative with the Renewable Energy Policy Network for the 21st Century (REN21) – can raise awareness of the importance of cost data and support the establishment of policies that can facilitate a transition to a truly sustainable energy future.

MORE INFORMATION

Watch a video interview with Michael Taylor, analyst at the IRENA Innovation and Technology Centre in which he discusses why renewable energy is becoming more competitive, as well as the importance of public-private partnerships in the sector.

CIVIL SOCIETY AND IRENA

The International Renewable Energy Agency (IRENA) is an intergovernmental organisation whose objective is to "promote the widespread and increased adoption and the sustainable use of all forms of renewable energy." This concerns all energy produced from renewable sources in a sustainable manner, including bioenergy, geothermal energy, hydropower, ocean, solar and wind energy. IRENA's inaugural Assembly was held in April 2011. As of January 2013, IRENA includes 160 signatories; and of these, 104 States and the EU have ratified the Statute and are IRENA Members. For more information about IRENA please visit: www.irena.org

In 2013 IRENA will lay the foundations for systematic co-operation with civil society by developing meaningful, transparent and effective mechanisms for engagement. In 2013, IRENA will also launch a consultation with civil society on the social acceptance of renewable energy. To this end, IRENA kindly requests for feedback from civil society organisations active in renewable energy. For more information, please contact Miquel Muñoz Cabré at mmunoz@irena.org. We look forward to hearing from you.

Download the feedback questionnaire here.

ABOUT

Outreach is the longest continually produced stakeholder magazine in the sustainable development arena. Published as a daily edition, Outreach provides a vehicle for critical analysis on key thematic topics in the sustainability and climate change arenas, giving a voice to individuals and organisations from all stakeholder groups. www.stakeholderforum.org/sf/outreach/

Outreach is published by Stakeholder Forum, an international organisation working to advance sustainable development and promote democracy at a global level. www.stakeholderforum.org

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Outreach is made possible by the generous support of:

IRENA
International Renewable Energy Agency