



CLEAN ENERGY AWARENESS CAMPAIGNS IN THE UAE: AN AWARENESS PROMOTERS PERSPECTIVE

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Abstract

Purpose: This paper presents an overview of recent public awareness campaigns on CE issues in the Gulf Cooperation Council (GCC) region. It also provides an in-depth case study of the United Arab Emirates (UAE), examining the obstacles and successes such campaigns have encountered in the country. As part of this work, the objectives of these CE awareness campaigns, the groups they have targeted, the institutions behind them, the level of support they have garnered and their impact are assessed.

Design/methodology/approach: Besides a critical review of various secondary sources (publicly available and otherwise), the paper reports on the findings of in-depth interviews conducted with several professionals engaged in CE awareness-raising activities in the UAE.



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Findings: It has become apparent that most of the CE awareness initiatives conducted in the UAE have focused on the demand side-energy management, whilst overlooking the need to create an enhanced awareness of energy sources used. Moreover, the paper identifies a number of potential success factors for CE awareness initiatives, such as embedding carefully targeted messages that appeal to the audience of the campaigns.

Originality/value: The paper provides policy recommendations on the most suitable ways to engender awareness of the benefits of CE as a means to achieve sustainable development goals and how to most effectively stimulate public participation in the UAE, and across the GCC region.

Keywords: Gulf Cooperation Council, United Arab Emirates, Clean energy, Public awareness campaigns

Paper type: Research paper

INTRODUCTION

Generally speaking, public awareness campaigns play an important role in raising the awareness of the public and in drawing their attention to the risks and/or advantages of certain behaviour. If effective, they can even encourage their target groups to review and possibly alter their values, habits and even lifestyles. For instance, the promotion of public safety and public health relies to a large extent on public benefit campaigns, such as those that call for safer driving habits, for the avoidance of alcohol or drugs and for the wearing of seat belts in private cars or public transportation. Such campaigns draw the attention of consumers to the dangers of accidents or to the “internal” (personal) and “external”(public) costs of certain activities or consumption. In this regard, public benefit campaigning has played a crucial role in the propagation of certain patterns of consumer behaviour in many countries (Kyung-Hee, 2007). For instance, when seat belts were first introduced in the United States, the public were often unaware of the advantages of these devices and were reluctant to accept their installation. However, greatly as a result of strong public awareness campaigns alongside law enforcement, seat belts have found increasing acceptance in society (Dinh-Zarret *et al.*, 2001).

This paper aims to provide an examination of recent awareness campaigns on clean energy (CE) solutions in the Gulf Cooperation Council (GCC) region, with a special focus on the United Arab Emirates (UAE). The paper is structured as follows. Firstly, a discussion

is provided on the role of public campaigns to support the CE agenda worldwide. This is followed by a brief overview of the status of CE in the GCC region, as well as that of CE campaigns across the GCC region. An account of the research methodology used to conduct the research is then provided, after which the research findings are presented. These include an overview of the case of the UAE as far as CE awareness campaigns are concerned, as well as a detailed analysis of the obstacles, successes and perceptions surrounding these campaigns. The paper concludes with a summary of the key findings and policy recommendations on the most suitable ways to engender awareness of the benefits and applicability of CE as a means to achieve sustainable development goals and how to most effectively encourage public participation in the CE sector in the UAE.

THE ROLE OF PUBLIC SUPPORT IN CLEAN ENERGY DEPLOYMENT: A GLOBAL PERSPECTIVE

It is often argued that public awareness campaigns are vital for policy makers and implementers as they constitute an important element in the support of CE innovation policies and programmes (Okaka, 2002). Public acceptance is, therefore, recognised as a critical factor shaping the widespread implementation of CE technologies and the achievement of environmental policy targets (Ekins, 2004). Moreover, it is commonly assumed that public attitudes need to change to ensure that more radical scenarios about the implementation of CE technologies are plausible (Devine-Wright, 2008). This also appears to apply in the context of the GCC, as a recent scenarios study has considered public perception to be one of the most decisive prerequisites for renewable energy innovations to penetrate the power market of Saudi Arabia (Al-Saleh, 2009).

Another factor that highlights the political importance of public attitudes is that, in the recent past, there has been widespread opposition to various CE developments, such as wind and biomass, around many parts of the world (Toke, 2002; Upham and Shackley, 2006). One of the most documented reasons for public opposition concerns the visual impact of wind turbines on the landscape (e.g. see Graham *et al.*, 2009; Warren *et al.*, 2005; Zoellner *et al.*, 2008). On some occasions, public opposition results from a lack of knowledge of improvements in CE technologies and their enormous potential. Some may overlook the fact that CE technologies have improved over the last few years; others may not understand the need for CE from the outset,

or have only a limited understanding of the motivations behind CE investments. For example, although one of the primary drivers behind investment in renewable energy is climate mitigation, the public may not necessarily realise the association between CE and protection of the environment. This was evident in a recent study undertaken in Greece, which illustrated that whilst the majority of the public believe that climatic changes are related to the consumption of fossil fuels, a much smaller proportion think that this could be addressed with the use of renewable energy technologies and CE solutions (Savvanidouet *al.*, 2010). Furthermore, there are reports of inaccurate risk perception amongst the public towards some renewable energy technologies as a result of being misinformed of CE developments.

To combat such phenomena, many studies (including Day and Monroe, 1999; Robitaille and Etcheverry, 2005) have suggested that such views can be altered through innovative educational strategies aimed at increasing awareness, political support, local capacity development and know-how. According to Rogers (1995), the diffusion rate of technologies within societies can also be influenced through “observability”, the extent to which the results of an innovation are visible to people. Examining the diffusion of CE technologies, Sawin (2004) further argues that education and information dissemination are necessary, not only to inform potential investors and customers about the much-needed potential of CE, but also to develop a trained workforce that is able to produce, install and maintain CE equipment. Jackson (2005), who conducted an extensive review of the literature related to “consumer behaviour” and “behavioural change”, suggested a broad model for encouraging “sustainable innovation”. In essence, he argued the need for strategies that enable (e.g. through removing barriers), encourage (through providing incentives) and engage people in the move towards “sustainable development”, whilst governments simultaneously lead by example.

Informing the public about the need for CE technologies is clearly important, as even when governments provide the necessary infrastructure; their efforts are likely to ultimately fail without the collaboration of the public. A review of the experiences of countries currently prominent in the CE arena illustrates that a strong level of public support has always been essential to the success of their renewable energy industries. For instance, several studies have affirmed that Germany only started to pave its way towards become a leading renewable energy force

after a series of effective policy interventions came into place as a result of a strong anti-nuclear and environmental movement driven by public concern (Jacobsson and Lauber, 2005; Lauber and Mez, 2004). This is particularly the case in democratic societies, where the public can exercise considerable influence on both the rate of technological diffusion and on the political agenda (e.g. see Bauer, 1997; Dolata, 2005; Frey, 1993).

It is interesting to note that, in contrast to the 1970s and 1980s, today's public unease concerning new energy technologies has been actively addressed not only by non-governmental organisations (NGOs) and environmental associations, but also by a wide variety of other stakeholders, such as citizens, voters and consumers, who have been very involved in promoting the CE cause. In order to assess the impact of such activities, several opinion polls have been launched in recent years to gather and quantify the public's attitude towards CE technologies. These surveys, mostly published on the internet and in various periodicals, vary in their results—according to the scope of the survey—in terms of sample population and types of energy technology. Examples of countries that have performed national-level surveys include the United Kingdom (British Wind Energy Association, 2005), the United States of America (Boise State University, 2008) and India (Chandrasekar and Kandpal, 2007). In addition, there exist many surveys that cover a large sample population across Europe (e.g. Eurobarometer, 2006) or around the globe (e.g. World Public Opinion, 2006). In addition to such surveys, there is also substantial case-based, qualitative, theoretical and empirical literature on the psychology and sociology of behaviour and attitudes in relation to renewable energy (e.g. Devine-Wright, 2005; Owens and Driffil, 2006; Upreti, 2004). Evidently, these studies all indicate that varying perceptions with regards to the acceptability of different renewable energy technologies are likely to exist in different parts of the world. Nevertheless, one main conclusion arising from such studies is that public support is an important factor to be considered for the successful deployment and diffusion of CE technologies within societies.

A CLOSER LOOK AT THE GCC REGION

This literature review section provides a brief account of the status of CE within the GCC countries, with a particular focus on the UAE. This is then followed by a description of CE awareness initiatives that took place in the GCC region.

Oil and gas resources have driven economic growth in GCC countries, including the UAE, through the generation of export revenues and allowing the development of infrastructure that meets the needs of the growing population. In the UAE, Abu Dhabi in particular has abundant hydrocarbon resources, holding 94 per cent of the UAE's proven oil reserves and 90 per cent of its natural gas reserves (Luomi, 2009; Krane, 2010). The UAE has recently shown a keen interest in engaging in a more sustainable development path, including the deployment of RE technologies. Various initiatives have been launched and major RE projects are being developed, demonstrating the commitment of the UAE to tap into alternative sources and transform the country into a regional hub for sustainable energy. Abu Dhabi also recently set a target of deriving seven per cent of its electricity from renewable sources (at the time of peak demand) by the year 2020 (Vidicanet *al.*, 2012). A look at the literature indicates that there are several strong strategic and economic drivers behind the commitment to transition to a more sustainable economy, such as the abundant resources in this region, the finite nature of hydrocarbon resources and the rapid technological development of CE technologies (Ferroukhi *et al.*, 2012). In addition, heavily subsidised, rapidly growing domestic energy consumption in the UAE reduces hydrocarbons export volumes and revenues (Al-Saleh, 2010). Another important driver is concerns about the UAE's increasingly damaging portrayal in the international policy arena, as a result of being one of the highest per capita emitters worldwide (Levitt, 2009; Reiche, 2010).

It should be recognised, however, that whilst renewable energy is important for achieving a sustainable energy future for the hydrocarbon-rich GCC region, it is not the only CE option available. Other CE means which have recently gained interest in the region include enhancing energy efficiency, as well as prospects for capturing CO₂ and storing it in deep rock formations for long term storage – a process commonly referred to as Carbon Capture and Storage (CCS). A recent study concerning the emerging CCS industry in Abu Dhabi pointed out that the role of public opinion is negligible in influencing critical decisions in this capital-intensive industry (Theeyattuparampilet *al.*, 2012). However, it is interesting to note that a lack of sustainability awareness and lack of concern towards energy and environment are often reported as the main

barriers that hinder CE initiatives in the GCC region (Al-Saleh and Taleb, 2010; Al-Saleh and Vidican, 2012; Doukaset *al.*, 2006; Taleb and Pitts, 2009). One example that also indicates the lack of public interest with regard to energy-related matters is a study (drawing on data from expert interviews) which revealed that the majority of Saudi citizens hold the view that oil will “last forever” and that “peak oil” and “global warming” are nothing but politically-driven lies created by the west in order to create a market for CE technologies (Al-Saleh, 2010).

When considering the case of the GCC region, it is important to bear in mind that this region does not traditionally enjoy the same high levels of democracy and public participation as those experienced around many other parts of the world. A recent editorial on the topic of environmental awareness in the Arab world argues that “*It is often not the case that strong public support for a certain cause will drive government policy in this region*” (Al-Saleh, 2011). It purports that to date, public participation has been restricted to supporting government policies rather than influencing their direction or questioning their utility.

Moreover, while climate change-related mitigation policies are usually advocated from the bottom-up by an active civil society and an informed public, the CE policy-making process in the GCC countries has largely been based on a top-down approach. For the time being, civil society and environmental NGOs continue to have limited bearing on formulating national policy choices and technology diffusion strategies in the GCC region. However, the situation may change as a result of the wave of democracy, commonly referred to as the “Arab Spring”, which has recently swept across the Middle East, although less so in the GCC region (mainly only in Bahrain and to a lesser degree Oman; Toumi, 2011). Hence, one would expect an increase in the role of NGOs, not only in terms of engagement with civil society, but also in the promotion of transparent policy-making and grassroots-initiated innovation (Al-Saleh, 2011). Thus far, the top-down approaches have worked somewhat to the advantage of the sustainability agenda in the GCC – partially because lobbying the monarchy would require fewer resources and less effort. Other factors that have somewhat neutralised the resistance to CE witnessed elsewhere in the world include the continuation of substantial subsidies for petroleum-based

products and the fact that GCC governments have not imposed any environmental taxes. At the same time, the GCC region has made rather extensive use of awareness campaigns and to a lesser extent regulations to change public behaviour. Adopting such measures that have low political costs works well with the political economy setting of the GCC region, because imposing a heavy tax burden could place the authoritarian power of the GCC governments under public scrutiny (Reiche, 2010).

CLEAN ENERGY AWARENESS CAMPAIGNS IN THE GCC REGION

At a regional level, the GCC Supreme Council has highlighted the importance of “*joint environmental action for....raising environmental awareness among citizens and conservation of natural resources*” (The Cooperation Council for the Arab States of the Gulf, 2009). The Council has introduced mild guidelines to promote environmental awareness and education, such as an “Environment Week” held in the GCC states every February, which grants awards for the most outstanding environmental initiative carried out in the region. The Council has also supported the inclusion of environmental concepts in education curricula and in television programmes to increase general awareness of climate change (GCC Secretariat General, 2009). A closer look at the public awareness campaigns in the GCC reveals that most of these activities have focused on the environment and climate change, in particular greening projects, clean-up campaigns, workshops and seminars, conferences, training and public lectures (Raouf, 2008). As yet, there have been very few initiatives that have been developed primarily targeted at raising awareness of the benefits of renewable energy at the regional level. To that end, one initiative of note is the formation of the EU-GCC Clean Energy Network, established to increase knowledge and information between the EU and GCC region on sustainable, clean and renewable energy (EU-GCC, 2012). The global media coverage of Masdar City in Abu Dhabi has also been said to have contributed to a rising public awareness regarding CE around the world (Reiche, 2009). However, it appears there is still room to promote CE solutions at the local level.

NGOs have been one of the most effective entities driving CE awareness campaigns worldwide. However, environmental NGOs working in the GCC region have been said to face several barriers in carrying out their activities. The most important of these is a lack of

funds and volunteers, which results in a lack of effectiveness in lobbying for their causes (Raouf, 2008). To that end, Brohmmanet *al.* (2007) argue that for public awareness initiatives to be successful, they must take into account both cultural factors (such as the trust of the public in institutions; a tradition of top-down versus bottom-up initiatives; environmental awareness; historical experience; and attitudes to new technology) and socio-economic and infrastructural factors (such as availability and perception of natural resources; interest in employment opportunities and regional economic development; perception of foreign investment; importance of energy independence; energy prices; technology and other input costs and competing technologies and industries). Another commonly reported shortcoming with regard to awareness campaigns (that is of relevance to CE awareness initiatives in the GCC region) is a lack of knowledge among the campaign practitioners, evaluators and their sponsors about the right methods for effective communication campaigns (Coffman, 2002).

Having established a basic understanding of the potential roles of CE awareness campaigns as well as their current status in the GCC region, it is of interest now to examine the case of the UAE in more detail. A primary research initiative was launched in the UAE with the intention of presenting new insights about previous CE awareness-raising initiatives. There is no doubt that public acceptance is becoming increasingly important for technology development and diffusion around the world (including the UAE, which is still at an early stage in the development of its CE sector). Therefore, a deeper understanding of the obstacles and successes that CE campaigns have encountered in the country is important to inform future undertakings. Currently, information concerning local experiences in this regard and an understanding of how public engagement with CE technologies is constructed and practised in the UAE is limited, with no studies having been conducted on the topic. With this in mind, the next section gives details of some of the methodological aspects of this research project.

RESEARCH METHODOLOGY

While carrying out this research, we were guided by the objective of exploring the experiences and concerns of those responsible for the development of CE awareness initiatives in the UAE. To obtain a more comprehensive understanding of the topic at hand and to supplement information gathered from secondary sources of information, primary

data was gathered from semi-structured interviews. Between March and April of 2012, a total of eight semi-structured interviews were conducted with professionals on a broad range of issues related to the topic of the research study. This was in order to explore their opinions and concerns about the challenges and opportunities surrounding CE awareness initiatives in the UAE. All interviews were conducted in person or over the phone, recorded and ranged in length from 20 to 90 minutes.

The criterion for selecting the interviewees was that each person should have been active in creating awareness around the CE field, so as to be well able to draw upon their personal experiences. Thus, the interviewees in the participant sample were carefully chosen based on research into well-known individuals whose accomplishments could be established via the internet, newspapers, published work, speeches and other pertinent material. In other words, a judgmental sampling technique was used. According to Saunders *et al.* (2007), such a sampling strategy is usually recommended for explorative and/or qualitative studies, especially when there are a limited number of people involved in the area being researched. The “snowball” technique was also used as a supplementary sampling technique. Interviewees themselves were asked to recommend other individuals who they believed would be knowledgeable on the study topic.

Ultimately, experts working in the UAE in different industries – in the public and private sectors, as well as academia and NGOs were interviewed. Table 1 shows the list of interviewee affiliations.

Affiliation	Department
Environment Agency – Abu Dhabi	Environmental Information, Science and Outreach
Environment Agency – Abu Dhabi	Environment Education Department
Environment Agency – Abu Dhabi	Environment Education Department
Masdar Institute	Outreach Programmes
Emirates Environmental Group	Confidential
Major Newspaper (confidential)	Columnist
Private University in the UAE (confidential)	Engineering – Renewable Energy
Private Company that Sells Solar Energy Products (confidential)	Marketing

Table 1. Affiliations of the interviewees

The semi-structured in-depth interviews were guided by an interview protocol, prepared beforehand and tailored specifically according to the experience and knowledge of the interviewees. The interviewees were given an overview of the research project and how the interview would be conducted, as well as being assured of the complete confidentiality of their views. At the start of the interview, an effort was made to emphasise that the interviewees' identities would not be divulged in the paper. This strategy helped to gain the confidence of the respondents, and increased the likelihood of them expressing their views more openly. They were also given the opportunity to ask for any clarifications or questions before the start of the interview. The interview protocol followed the archetypical "triangular" shape from the general to the specific (Hurworth, 1996; Walter and Gutscher, 2011), where broad questions were first asked on their educational background and work experience in order to set the participant at ease. They were then asked about their current work responsibilities, after which questions were directly related to the topic at hand. Towards the end of the interview, key questions were asked (activities used to influence acceptance of CE, success factors of CE awareness programmes, the need for action, etc.). The full interview protocol is found in Appendix A.

The majority of interviewees did not object to audio-recording of the actual interviews, allowing for transcripts to be prepared for qualitative analysis. The research findings were analysed iteratively, moving back and forth between data collection, analysis and literature. This allowed for engagement with the data in a structured way, finding patterns and testing hypotheses in a consistent manner across the different interviewees. In order to enhance the procedural reliability of the research (Flick, 2006), memos were written directly after the completion of each interview. This was to help capture thoughts, opinions and perceptions of the transcript prior to coding. In addition, an effort was made to confirm data obtained from primary sources by checking against data obtained from secondary sources.

After incorporating the data with extensive notes taken during the data gathering stage, the multiple data sources were integrated to develop themes around issues surrounding public awareness campaigns on CE in the UAE. Additional information was also collected and reviewed in order to provide a contextual backdrop from which to understand more clearly the obstacles and successes CE awareness campaigns in the UAE have faced.

RESEARCH FINDINGS

Using insights gained primarily from interviewing active CE awareness promoters, this section provides a detailed discussion of CE awareness campaigns that have recently taken place in the UAE, followed by an examination of the obstacles and successes such campaigns have encountered in the country.

CLEAN ENERGY AWARENESS INITIATIVES IN THE UAE

It has become apparent from our research that, when compared to other GCC countries, the UAE is doing well in terms of the level of CE awareness. Since 2007, an effort has been made by the Environment Agency of Abu Dhabi to regularly measure both CE awareness and behaviour by asking the general public questions about a range of environment-related issues, including their willingness to use energy-efficient appliances. These enquiries have endeavoured to understand the role of influencing bodies such as the media, academics and commerce and their contribution to raising awareness and changing the behaviour of different sectors of the public. The primary objective behind this annual Environment Awareness and Behaviour Survey is to identify priority issues from an educational and behavioural perspective and to ascertain what people want from the government in order to help them to live more sustainably⁴. The most recent survey revealed an increase of both awareness and CE-conscious behaviour across the emirate from an initial level of 49 per cent to 58.5 per cent over the period 2007-2011. This significant improvement is largely attributable to the launching of extensive awareness raising activities in the UAE (Abdul Kader, 2011). Based on findings that emerged from both primary and secondary sources of information, Table 2 covers some of the most important CE awareness campaigns that have recently taken place across the UAE. This table includes awareness campaigns taking place through various media means by the UAE Ministry of Environment and Water; the Masdar Initiative; Abu Dhabi Water and Electricity Authority (ADWEA); and Dubai Water and Electricity Authority (DEWA).

As can be seen, the Masdar Initiative, geared towards the advancement, development and commercialisation of renewable and alternate energy technologies (as part of the country's aim to diversify

⁴ Source of information is from an internal document provided by an interviewee at the Environment Agency-Abu Dhabi.

its energy portfolio) has been particularly active in the promotion and marketing of its renewable energy projects to the public in the UAE. It emerged from our interviews that the Masdar Institute (i.e. one of the five components of the Masdar Initiative) has been one of the main actors driving CE awareness in the UAE. The Masdar Institute has been quite active in promoting outreach activities to the younger public and larger community – extending to high school as well as university students. However, since 2011, the institute has pulled back from many of its activities in schools (which used to include delivering lectures, workshops and lab activities) and has recently focused on running the YFEL programme and recruiting Emirati university students through offering internships focusing on CE-related subjects.

OBSTACLES AND SUCCESSES OF CLEAN ENERGY AWARENESS INITIATIVES IN THE UAE

It became apparent in our discussions with interviewees that the government of the UAE (a monarchy made up mostly of the ruling elite of the royal family) acts as a strongly paternalistic and supreme decision maker, where decisions take place at the uppermost level of government authority and society remains deeply committed to traditional tribal roles. This characteristic differentiates the UAE's model of governance from many other developed and developing countries, meaning that the growth of a renewable energy industry—for instance—hinges strongly on political decision-making at the upper levels of government. Interviews indicated that particularly with regards to diversifying the energy mix and the UAE's energy strategy, the decision-making process has primarily been based on a “top-down” approach, where the government has initiated the majority of CE projects and the public have had a limited role in this regard. This closely mirrors findings from a recent study on the role of public opinion regarding decisions in the oil and gas industry, “*due to the nature of the governing structure in Abu Dhabi, public opinion does not influence decision-making for oil and gas industry projects*” (Theeyattuparampilet *et al.*, 2012, p. 11). It was also highlighted that the potential for community-led initiatives and interest groups to bring about grassroots change in the energy mix is limited.⁵ Although public opinion is usually expected to influence national priorities and the acceptability—as well as the acceptance—of new technologies, this does not appear to necessarily be the case in the UAE. As such, some interviewees stated that there is a perception among policy makers that

⁵ This has also been reported by Vidicanet *et al.* (2012).

Name of the Campaign	Objective/Activity	Target Group	Frequency	Organiser(s)
Heroes of the UAE	Highlighting the high consumption level of energy in the UAE and providing the public with easy-to-follow tips and guidelines on how to reduce energy consumption.	Public	One off	The Emirates Wildlife Society in association with the Worldwide Fund for Nature (EWS-WWF); The Environment Agency- Abu Dhabi. The campaign is also endorsed by the Ministry of Energy, the Ministry of Environment and Water, ADWEA and the Masdar Initiative.
Young Future Energy Leaders (YFEL)	Raising awareness in students and the young population on the fields of sustainability and CE technologies.	Young population	Run as a key element of the World Future Energy Summit that takes place every December in Abu Dhabi	Masdar Institute.
Shaabiat Al- Cartoon	Building awareness of sustainability and CE through a popular medium of cartoons in the UAE.	Public	One off	Masdar Initiative in partnership with Dubai-based Fanar Media Production.
“Greening” School Curricula	Integrating environmental concepts into the school curriculum.	Pupils	Ongoing	Ministry of Education and the Environment Agency – Abu Dhabi.
Enviro-Spellathon	Booklets covering various environmental themes are distributed to school students for study. Students who demonstrate that they have learned the material are awarded certificates and gifts.	Children aged 7 to 13 years	Ongoing	Conceived by the EWS-WWF and tailored for the UAE by the Environment Agency – Abu Dhabi.

Table 2. An overview of the most recent CE awareness campaigns in the UAE

Name of the Campaign	Objective/Activity	Target Group	Frequency	Organiser(s):
Turn-it-off	Symbolic installations, such as giant light bulbs and switches, are placed in airports and shopping malls.	Public	Ongoing since 2010	Environment Agency – Abu Dhabi.
Earth Hour	In line with the international event “Earth Hour”, the UAE population is urged to participate through switching off all lights for a period of one hour.	Public	The UAE has been participating since 2009 – March 13, 2030 UAE time.	Various government and private organisations now urge their staff to participate. Lights in airports, roads, shopping malls and many other places are switched off during this event. Environment Agency – Abu Dhabi and Emirates Foundation for Philanthropy.
Eco club	Financial grants are awarded to set up eco clubs in many schools across the UAE. Club members are expected to meet regularly and run at least two projects per year in order to raise CE awareness in the school and their communities.	Pupils and community	Ongoing	Environment Agency – Abu Dhabi and Emirates Foundation for Philanthropy.
Neighbourhood	A team from DEWA visits residential communities throughout Dubai in a specially-designed bus in order to communicate their environment and CE awareness programme.	Public	Ongoing	DEWA.

the transition of the UAE to a CE future does not necessarily require the public's support to succeed; i.e. there is no urgent need to create awareness among the public with regard to CE sources and their potential in the region at the current time.

Several factors appear to be making an inadvertent contribution to the public's lack of interest in CE sources. Rapidly growing domestic energy consumption derived from conventional energy sources is currently being heavily subsidised in the UAE (El-Husseini *et al.*, 2009). Domestic electricity tariffs range between USD 0.008 and USD 0.041/kWh (depending upon the remoteness of the area and nationality), which equates to around only 20 to 60 per cent of production costs (Mezheret *et al.*, 2011). These subsidies do not distinguish between the time of day or year and there is no adjustment based on customer consumption levels.⁶ These subsidies, which are usually in the form of state-imposed tariffs and tax-free regulations (Qader, 2009), often result in electricity prices which do not accurately reflect to consumers the depleting nature of resources or the associated environmental costs. Therefore, although in the majority of countries the cost of using energy is borne by the consumer rather than through public finances, in the UAE consumers have little or no incentive to use energy efficiently and to avoid engaging in wasteful practices, as the sourcing of their energy has no direct impact on the consumer.

Nevertheless, interviewees indicated that in the coming decade, public awareness and concerns about pollution and climate change could shift dramatically if energy prices continue to rise and subsidies are slowly removed. There have already been some steps forward in this regard. Recently, the GCC states have started reducing subsidies and the UAE increased gasoline prices in April and July of 2010, which although still below international prices, became the highest in the GCC (IEA, 2011). From March 2012, a new utility bill for water and electricity was put into place across the Emirate of Abu Dhabi, as an indication of the government subsidy. Additionally, residential customers will have two consumption bands, showing the "ideal-average" and above "ideal-average" range of consumption (Anoop, 2012).

⁶ Such tariffs are indeed very low when compared with other countries. For example, while electricity tariffs in the UAE range between \$0.01 and \$0.04/kWh, tariffs in the United States of America are around \$0.11/kWh – also significantly lower than levels in most European countries (EIA, 2010).

However, it must be noted that interviewees were sceptical that such subsidy reductions would continue, indicating that continuing steps in this direction may be difficult to implement, mainly as a result of the strong political and social reasons which exist behind the current level of subsidies.⁷ Nevertheless, should subsidies indeed be significantly reduced, it could allow for a renewed government interest towards initiating public awareness campaigns specifically targeted on raising awareness about renewable energy sources.

Another of the main findings arising from our discussions was that initiatives to raise awareness on CE appear to have mostly been focused on demand side-energy management (i.e. end use consumption, particularly energy efficiency) as opposed to creating an enhanced awareness of energy sources used. So far, initiatives have focused on encouraging people to become more efficient in the manner in which they use energy, but have not addressed to the same degree the issue of which energy sources (in particular renewables) are used. As one interviewer stated, the focus of awareness initiatives has been more on *“how people do things and use what we use more efficiently, as opposed to where they get energy from”*. The interviewee stated that *“Certainly, there is a need for people to understand resources...in terms of where they get their energy from. There is really not much say that the public has on that issue, perhaps elsewhere, but not here”*. Another factor contributing to this is that the supply of energy in the UAE is a government monopoly where no competitive market truly exists: *“how energy is produced is a government decision and the public does not really have much choice. The public’s decision is only to use the energy efficiently”*.

Last, but certainly not least, one of the most important elements behind the success of CE awareness campaigns is the underlying messaging behind the campaign. In order for an awareness programme to effectively alter the attitudes of energy users and resonate with the public, messages need to be carefully developed and targeted (Manjunath, 2007). To that end, it has emerged that one of the most effective means to attract the attention of the local people are those relating environmental protection with Sheikh Zayed’s and Islamic teachings. It is considered a religious duty to “go green” through taking steps to safeguard the environment and

⁷ The issue of electricity subsidies in the UAE is politically sensitive, as many consider cheap energy a right of citizenship and a way by which wealth is redistributed to the public (The Economist Intelligence Unit, 2010; Krane, 2010).

preserve the Earth's natural resources (Al-Saleh, 2010). Nonetheless, as pointed out by one of the interviewees, given the diverse fabric of the UAE community, it would be challenging to identify universally effective campaign messages. As affirmed by the interviewee, *"it is difficult here because the public are so diverse—you have expats and locals and different issues among different ethnic mixes"*.

CONCLUDING REMARKS

Recognising the importance of an informed public in supporting the transition to a CE future, GCC countries have shown a noticeable willingness to generate awareness of the benefits of CE use. This paper provides an examination of recent CE awareness campaigns, including their objectives, the groups they have targeted, the actors involved in these campaigns, and the level of support they have garnered, as well as an analysis of the obstacles, successes and perceptions surrounding these campaigns. Our research indicated that in the UAE, a variety of stakeholders, including governmental, NGOs and private entities, have been exerting significant efforts to raise CE awareness and knowledge levels. However, our findings indicate that the decision-making process has primarily been based on a "top-down" approach, where the government has initiated the majority of CE projects. The findings also highlighted the fact that the potential for community-led initiatives and interest groups to bring about grassroots change in the energy mix is currently limited. There is also a perception among policy makers that there is no urgent need to create awareness among the public with regard to CE sources and their potential in the region at the current time. The public's lack of interest in CE sources was also reported to be due greatly to the heavy subsidies supporting domestic conventional energy consumption, such that the cost of using energy is borne by public finances rather than the consumer. Awareness campaigns have also focused more on demand side management as opposed to creating an awareness of energy sources used.

It was indicated that the reduction of subsidies could allow for a renewed government interest towards initiating public awareness campaigns specifically targeted at raising awareness of renewable energy sources. Policy makers would also be advised to initiate greater consultations among stakeholders on their experiences and interests, and to develop multi-directional communication with the public on issues surrounding CE. The broader public needs to understand the

fulleconomic and social costs of the currentenergy system, as well as its unsustainability and the potential of CE to provide a growing share of energy supply in the UAE.Future research that stems from this study could take a deeper look at the decision-making process concerning CE in the UAE. This would enable a clearer understanding of the roles and responsibilities of the participating stakeholders in CE developments.

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APPENDIX A: INTERVIEW PROTOCOL

General

- What is your personal and educational background?
- Can you provide us with an overview of your career path?
- What is the mandate of the organisation you work in and what are your activities/responsibilities?

The What, Where and How of CE Awareness Campaigns in the UAE

- Have there been efforts to raise public awareness on CE?
- What have been the specific objectives of such initiatives?
- Which institutions have led/been behind such initiatives? Has it always been a federal institution? Have there been initiatives taken at the local level or by civil society entities?

- Which other stakeholders have been involved in/contributed to such initiatives (energy agencies, local initiatives, NGOs, public utility companies, service providers, etc.)?
- Who have/should CE awareness campaigns target (energy consumers, children [future energy consumers], educators, manufacturers and other businesses, government agencies)?
- What have been the preferred communication tools when delivering CE awareness campaigns to audiences (electronic media, popular media, print media, multi-media formats, etc.)?
- How willing has the public been to participate in CE awareness campaigns? Have they been mostly receptors of such information or have they also had a more active role?
- What messages are most effective to use in a successful public awareness campaign in UAE?

Barriers and drivers for CE Public Awareness Campaigns in the UAE

- What are the main drivers to the development of successful CE awareness campaigns?
- It has been said that some of the barriers faced by environmental NGO's working in the GCC region include problems such as lack of funds and volunteers. What would you say are the main barriers to the development of successful CE awareness campaigns?
- Is there sufficient awareness among the campaign practitioners, evaluators and their sponsors about the right methods for effective CE awareness campaigns and the need for such initiatives? What methods are most effective in UAE to educate public (newspaper, internet, TV, brochures, leaflets, posters/public ads...)?
- Are there sufficient public budget allocations for RE awareness campaigns?
- How would you assess current national RE awareness campaign strategies? What level of support/impact have these initiatives garnered?
- Until recently, public participation has been restricted to supporting government policies rather than influencing their direction, not to mention questioning the utility of these policies. Has this worked to the benefit or disadvantage of the UAE's green agenda?

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