



Managing change in constant evolving sustainable energy market: An exploratory study of motivators, enablers, and barriers

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ABSTRACT

Change management (CM) has been a persistent subject among organizations. The basic arguments originate from how and why organizations manage changes. However, CM is paramount for the success and survival of an organization in both highly competitive local and evolving global markets. The general perception of change usefulness or the aims of CM varies among stakeholders, namely employees, top management, as well as customers and governments. Against this backdrop, the current study explores the issue and identifies the motivators, enablers, and barriers of CM in the energy sector by focusing on different stakeholder categories: customers, employees, top management, and government. In addition, CM-related critical facilitating and barricading factors are explored with a structured method from all stakeholders' perspective. A total of 75 face-to-face interviews were carried out in four different big energy organizations where information was extracted and coded in commonality analysis. The findings concluded that all stakeholders hold a common perception that community welfare/lifestyle, environmental aspects, and country brand/image are the top motives, along with effective/transparent communication, willingness, and flexibility serving as enablers. Additionally, global stability, fear, and change complications are among the main challenges facing CM. With special consideration to each stakeholder, a wide-range commonality analysis demonstrates all stakeholders' perceptions of what drives, inhibits, and facilitates CM initiatives. It would be more beneficial for energy companies to balance all anticipations of stakeholders to perform successful and sustainable CM. This study is among the first in the region in the energy sector to adopt a broad stakeholder perspective for motivators, enablers, and barriers of CM towards green energy.

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1. Introduction

Change management (CM) is defined as “the process of continually renewing an organization's direction, structure, and capabilities to serve the ever-changing needs of external and internal customers” (Moran and Brightman, 2001). More specifically, CM is a structured approach where some company individuals, managers, and stakeholders' transit from the current state to the futuristic state in order to remain competitive and reliable in the industry. On the other hand, Beer and Nohria (2000) describe the importance of CM by accepting the phenomenon of change and realizing that companies will perish if they do not change. Mostly, CM failures are attributed to the incompetence of top management or employees. Equally, employees and management often put the blame the failure on each other.

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The United Arab Emirates (UAE) energy sector had the recent liberation of energy production to the private sector; to that end, having them work under the regulation of the government underpins the need to identify what processes must be used in such rapid developments in different sectors poses a major challenge to the UAE and other parts of the region (Rabia et al., 2013; Griffin et al., 2016). The need to be a leader in the green energy market has always found support from the government approach, as described by the UAE Prime Minister, Sheikh Mohammad Al Maktoum “This is in order to preserve our local environment and achieve sustainable, low-cost development” (Gulf News, 2018). This quote implies a further commitment of the emirates to renewables and sustainable energy – by protecting environment and demonstrating social responsibility with financial feasibility, as it makes them come under closer international scrutiny on the delivery of Masdar's promises (Mari, 2009).

By doing so, the energy industry has been encouraged to provide their customers with efficient services, operational process reliability, as well as performance and availability enhancement

in order to meet the demands of international companies seeking business in UAE. In addition, over the past few decades, UAE has gone through continued periods of rapid changes in economic development followed by management styles. The UAE government itself has been a major target of change and development across the region. As elucidated in Abu Dhabi's 2030 Vision, the UAE government is committed to the re-engineering and automation of its processes in order to achieve greater operational excellence (Bin Taher et al., 2015).

The current market and environment influenced by globalization, coupled with the ever-intensifying competition, have caused organizations around the world in general and UAE energy organizations in specific to make changes in their approach. In recent years, the International Energy Agency and other major energy organizations have projected a steady rise in the share of renewable energy in the global energy mix (Bahgat, 2015). By doing so, the UAE seeks to share knowledge with other countries and encourage innovation in the field of renewable energy, but the achievement of those goals requires structural changes in key inter-organizational business processes with a view to improve their long-term economic performance (Carter and Rogers, 2008).

Global market trends have been increasingly incorporating green energy, as illustrated in Fig. 1. The forecasted world energy consumption by Energy Source indicates a mass demand for renewable and alternative energy since 2010 with a gradual increase (IEO, 2018). Yet, the curve in 2018 indicates a continuous upwards demands. Thus, energy organizations across the UAE have been constantly changing their vision, mission, and structure to manage the latest technological and administrative approach, thereby leading them to rapid change. According to Burnes (2004), change is an ever-present feature of organizational life at an operational as well as strategic level. Therefore, most energy organizations in the UAE have also been obliged to change.

In addition, the UAE government has organized a reputed World Government Summit, a global meeting that is devoted to shaping the future of governments worldwide (Eggers and Bellman, 2016). The summit recognizes the importance of research into change management that incorporates innovation and creativity to offer solutions to the universal challenges facing humanity (MRCGI and SRI, 2016). The summit also emphasizes sharing knowledge between governments, technologies, innovations, and leadership groups, also comprising of roundtables, workshops, networking breaks, and main addresses by top countries leaders. At the micro-level, consumers and communities are also made more self-aware of environmental implications.

Globally, the fluctuating prices of oil in recent years have led to growing uncertainty for some organizations as their revenue did not give the desired results every year to maintain their stability; therefore, these organizations were continuously adapting and changing to ensure their survival. Additionally, the recent political issues in adjacent countries have caused disruptions of oil supplies and abrupt oil price rises, which, in turn, have caused social distress, economic setbacks, and political discontent (Bahgat, 2015). Furthermore, the geo-strategic disputes have also contributed to intense price fluctuation and volatility in the region (Bahgat, 2015). Consequently, countries were impelled to prioritize changing their strategy because organizational change cannot be separated from organizational strategy, or vice versa (Rieley and Clarkson, 2001; Burnes, 2004).

However, most organizations, specifically energy entities, greatly struggle to implement and maintain sustainable changes. Research indicates a probability of 70% failure of CM initiatives (Hans et al., 2009), leading to many questions among researchers for the causes of this failure. The nature of these CM failures is mostly objective or summation of the change outcome. The lack

of information concerning the relationships between organizations, employees, top management, customers, and governments is attributed to the lack of in-depth research.

Thus, with the increasing need of organizational change, change is fast becoming a highly required managerial skill and there is a need to determine the properties of a successful CM leader (Graetz, 2000; Senior, 2002). The main challenge seen by most researchers and practitioners is the success of managing major changes in the organizations. This challenge has been reported by many studies, according to which failure rates are as high as 70% (Alasadi and Askary, 2014). The high rate of CM failures in UAE, as specified by Bin Taher et al. (2015), demonstrates the importance of considering the motivators, enablers, and barriers of CM. Within the three factors of change, the study includes the context of enablers, motives, and barriers where it will discuss various elements, including implicit change leadership (ICL) dimensions of ideal change leaders: strategic/technical competence, execution competence, social competence, character, and resilience (Magsaysay and Hechanova, 2017). Subsequently, this paper explores the motivators, barriers, and enablers of successful CM for UAE-based organizations that specialize in energy generation. Analysing the gaps and factors helps companies to steer stakeholders towards change in the right directions, whilst avoiding diagnose difficulty or limiting the probability of failure. Accordingly, stakeholders can narrow down the success factors and elements that hinder change objectives in their desired direction and top management, employees, customers, and governments in favour of their organization future visions.

The study has been categorized into three main sections starting with literature review and identifying what and how change enablers, motives, and barriers exist among different stakeholders. It then discusses the implications of each enabler, motive, and barrier. Subsequently, the study performs a thorough and comprehensive analysis of each enabling element, motive, and barrier. Lastly, it analyses and discusses the findings with the conclusion and implications.

2. Background studies

CM is defined as the continual renewing of an organization (Todnem, 2005); Gilley et al. (2009) describe CM as the most effective way of improving the current state of any organization. The factors of motivators, enablers, and barriers concerning any CM initiative play a pivotal role in deciding the zone of CM used. Enablers of CM are considered the elements that accelerate the CM and strengthen the support of employees as well as top management towards one objective that serves the change desired by the organization. The need to research enablers and barriers are based on the input, experience of the leaders, as well as the nature of organization structure that advocates the view that change is best implemented through successive, limited, and negotiated shifts (Burnes, 2004). A better approach to change is a scenario where organizations and their people continually monitor, sense, and respond to the internal and external environment in small steps as part of an on-going process (Luecke, 2003).

Currently, CM has become more of a business in the local market. Change in an organization is not a result of coincidence or actions based on the desires of management. Instead, change is always related to the survival mode of organizations globally. Also, a need to develop and evolve is felt in an erratic market owing to financial changes taking place in business districts. When an organization decides to change, there is a significant alteration in its vision, mission, or process. Various external changes stem from outside an organization, and a desire to maintain a competitive advantage necessitates constant internal changes in an organization (Kotter, 2008; Beer and Nohria, 2000; Wanberg and Banas, 2000).

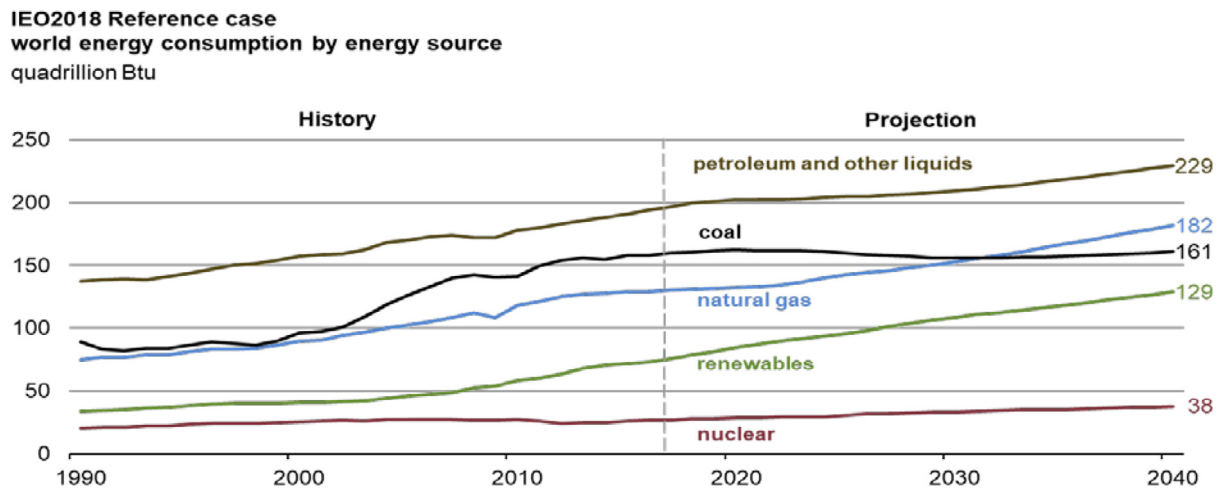


Fig. 1. Forecasted world energy consumption (Energy Source).

2.1. Change management in the UAE energy market

The world energy market has undergone many changes in recent years. The main underlying factor behind these changes has been the fluctuating price of fuel (Noh et al., 2016), global warming, and the fast-paced development of green energy and environmentally-friendly renewable options (Toufic et al., 2012). In addition, although the decreased revenue was caused by the financial crisis in 2008, a growing demand has recently been witnessed for electricity growth. The UAE energy market has also been anticipated since 2010, despite it is evident how the financial crisis has inflicted damages to energy organizations. Therefore, Shams1 was the first CSP power plant that underwent construction in the UAE (Toufic et al., 2011).

Therefore, the majority of energy organizations invested heavily in studies and consultation projects and are at least a step ahead of all global organizations. In renewable energy, the UAE market was lagging behind in many milestones, especially in the use of wind turbines and solar energy. Yet, the UAE market as recently has witnessed a drastic leap for energy organization such as the Dubai Electricity and Water Authority (DEWA), Abu Dhabi Electricity and Water Authority (ADEWA), Sharjah Electricity and Water Authority (SEWA), and Federal Electricity and Water Authority (FEWA). Despite experiencing time lapses in development, each organization is now following the same track of development (Petroleum Economist, 2015).

The developments and changes among these organizations have not been impervious to major issues, with customers demanding better facilities and enhanced possibilities of connecting and contributing to national grid production. Hence, all energy organizations would do well to alter their strategies and structures in their organization to gain the coveted customer faith in their services (EWS-WWF, 2018). The change translates into becoming whatever path desired by the energy organization. In doing so, most organizations have implemented change, and with each change, several mishaps and operational catastrophes were observed. Within each organization, leaders lived the era of success and failure. Also, change failure was the most noticed, and researches joined a furious race to analyse and understand why most CM initiatives have failed. Interestingly, the failure rates did not decrease below 70%, as indicated by most studies (Beer and Nohria, 2000; Burnes, 2005; Yaseen and Okour, 2012). Therefore, this study contributes to energy organization by mapping the success and providing meditating solutions to those organizations.

2.2. Motives of change

Green energy is a growing phenomenon can be traced back to the 1980's and has emerged as awareness planted in corporations and the public. Green or natural capitalism (Foster, 2002; Hawken et al., 1999; Kovel, 1999) is typically concerned with the reconciliation of ecological and economic values. Most approaches towards renewable resources have been concurrently supported by arguments regarding the sustainability and future of humanity. Green capitalism has become the brand image of a company that applies sustainability and green energy approaches to grasp potential customers and the attention of major corporations as part of global branding. Studies have demonstrated that firm-related outcomes such as brand image (Brown and Dacin, 1997), brand attitudes, or purchase intentions (Barone et al., 2007; Becker-Olsen et al., 2006) can be enhanced when consumers look favourably upon company initiatives that benefit the society.

Motivation towards renewable and green energy is mainly directed towards gaining consumers' faith and focus towards a company that is committed to providing a better environment and planet at large for the next generation. When motivations are considered self-serving, attitudes toward firms are likely to diminish; on the other hand, motivations that are deemed public-serving attitudes are more likely to be enhanced (Becker-Olsen et al., 2006). As a result, consumers are expected to respond more favourably to a societal initiative that accentuates public-serving motives as opposed to self-serving motives (Barone et al., 2007; Becker-Olsen et al., 2006; Drumwright, 1996; Smith, 1994; Webb and Mohr, 1998).

2.3. Enablers of successful change

Most of the organizations in UAE have applied changes that failed because they ignored an important part of the attitude of leaders, organizations, communication, transparency, and how organizations formulate their rules and regulations, thus exhibiting inflexibility with employees and customers alike. Attitude is a main subject or enabler and one of the major insights that adequately explains the remaining change enablers.

Meanwhile communication is an indicator of an organization's healthiness, and leaders must enable clear and transparent media to eliminate conflicts or contradictions occur. A good communicating leader passes on a transparent message that demonstrates an understanding of company employees' needs and conveys

the management objective to employees without any ambiguity or ambivalence. Leaders must therefore focus on creating high-quality exchange relationships (Schermerhorn et al., 2011).

Knowledge sharing is the most powerful tool for evaluating any managerial oriented project of any organization. According to Marchand et al. (2001), information may be more freely shared among individuals or small teams as compared to between departments in a company, thereby supporting the claim that these individuals or small teams constitute the intelligence community within an organization.

Most organizations have their leaders determine and implement their changes plan, relegating employees to a passive position who are left with no option but to face the consequence. Hence, employees are not really involved with the change process at any level. Active participation and information provision promote readiness for change, which forms a supportive link to the success of implementing change (Wanberg and Banas, 2000). In order to create a shared meaning of the vision, it is important that the vision “must project people into the future so that they can readily see it in action and imagine themselves as part of it” (Levin, 2000).

Leaders who create an intelligent culture that works synergistically towards specific goals serves the organizational mission and vision as well as any change project. In this regard, cultural intelligence confirms the transactional realities and concentrates on intercultural fields (Cavanaugh and Gooderham, 2007). It denotes the individual ability to perceive, interpret, and effectively act in the conditions having cultural variety (Earley and Peterson, 2004).

2.4. Barriers to change

Senge (2006) states that, “People don’t resist change. They resist being changed”. An employee’s resistance to change is attributed to various causes, including habits and inertia. A good example would be that employees tend to leave the company or stick with their job during any crisis based on larger economic issues. Unfortunately, in the GCC region, the employees were never considered to be an issue when applying changes and change management did not consider them a significant factor of success. The implementation of change shall consider major barriers such as change complexity; methodology; and social, communication, and leadership skills. Hence, ignoring the deficiencies in leaders’ skills and communication would result in a barrier that stymies the change process. Company politics and power struggles, stakeholder management, hidden agendas, cultural barriers, motivation issues, lack of communication, conflict resolution, resistance to change, ambiguous roles and responsibilities, poor project leadership, and insufficient sponsorship (Turner and Muller, 2005; Toor and Ogunlana, 2009; Levasseur, 2001).

It is notable that change cannot be completely managed (Edmons, 2011), but several factors can lower the barriers to change, such as communication, employee involvement, and ensuring that the needed organizational capabilities and structures can co-exist (Carter, 2008; Rosenberg and Mosca, 2011). Co-leadership can become sustainable by regularly re-evaluating the roles and effectiveness of the leaders (Rebecca, 2015). Furthermore, the space between the leader and the workforce assumes great significance to the exercise of power. Power does not operate without that distance (Bruce, 2000). One of the common barriers to changing management is clear objectives, without which the resistance curve starts to increase. Thus, management needs to reconsider their approaches to the organization, direction, and motivation of all employees (Daft and Marcic, 2004).

Clarifying the overall change strategy helps in the attainment of desired results and methods in which all employees

are encouraged to accept the organization’s values and guiding principles (Anderson and Anderson, 2001, p. 25). There has been an increased awareness of the roles of those who resist change, not necessarily from a position of pure negativism, but from a position of improved understanding and involvement (Lewis, 2011), with the aim of improving change outcomes (Bartunek et al., 2011; Burke, 2013). The genesis of basic fear is the deviation from the standards, which causes failure by not allowing or empowering employees within the organization to change. This awareness includes evaluating the current systems, processes and capabilities to facilitate change (Farrell et al., 2005). Miller et al. (2006) asserted that employees who are empowered with effective organizational skills, attitudes, and opportunities tend to embrace change more readily. Fig. 2 illustrates the exploring critical factors of change management in this study.

The main objective of this study is to analyse the insights of CM from different stakeholder perspectives with regard to how they intercept change. Categorically, these objectives can be stated as follows:

- 1- Identify and state the motives, enablers, and barriers to change in the UAE’s energy sector and then outline the successful CM factors and elements for energy organizations.
- 2- Identify the commonalities among different groups of stakeholders in terms of motives, enablers, and barriers of CM.
- 3- Outline some implications for the change leaders by highlighting the critical factors of CM practices in the energy sector, as perceived by stakeholder groups.

3. Research approach and methodology

In order to explore the factors of enablers, motivators and barriers for CM in the energy sector, this study has adopted the interviews method in order to collect qualitative data from several reputed UAE-based energy organizations. The collected data shall support to reveal the status of change practices in these energy organizations. Open-ended questions were used to extract the desired information about the motives, enablers, and barriers they collected during the changing process. In addition, employees, managers, and leaders expressed their views regarding how it started and its motives, where the change process started and eventually proceeded. Lastly, they were asked questions concerning the success of the change and whether it could be implemented in a better method, as well as what they thought was missing. Momentarily, they were expressing their views about the changes applied for alternative or green energies.

Other sources for data collection such as observations, websites, speeches, and news agencies were also used in the study. In addition, the hand-out of UAE vision 2021 was scrutinized to elicit important information pertaining to the UAE’s vision of new energy resources from a governmental perspective. The data were collected based on Fig. 3 in order to reflect the stakeholders’ point of view for CM motivators, barriers, and enablers in the energy sector.

A total of 75 interviews were conducted, involving individuals holding key persons among different stakeholder groups, as illustrated in Fig. 3. Mostly, there was a focus on employees and CM leaders along with some vice presidents of different organizations, such as Dubai Electricity and Water Authority (DEWA), Abu Dhabi Electricity and Water Authority (ADWEA), Sharjah Electricity and Water Authority (SEWA), and Fujairah Electricity and Water Authority (FEWA). Each interview lasted for 45 to 60 min, targeting three vice presidents and seven senior managers. Subsequently, 39 employees were also interviewed, as they are the main elements of conduit between organizations and customers. The employees interviewed were selected from three main job criteria, including 12 middle-level employees, 18

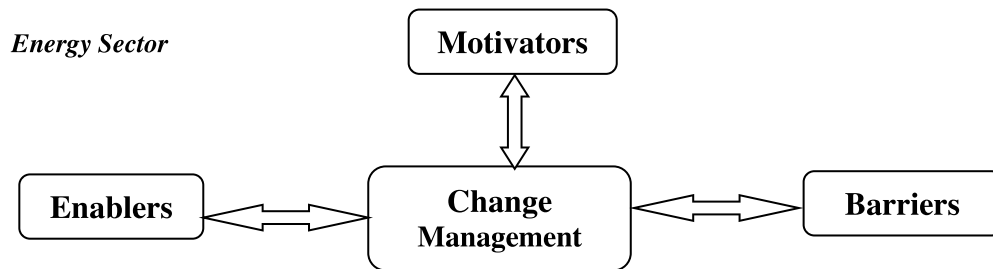


Fig. 2. Exploring critical factors of change management.

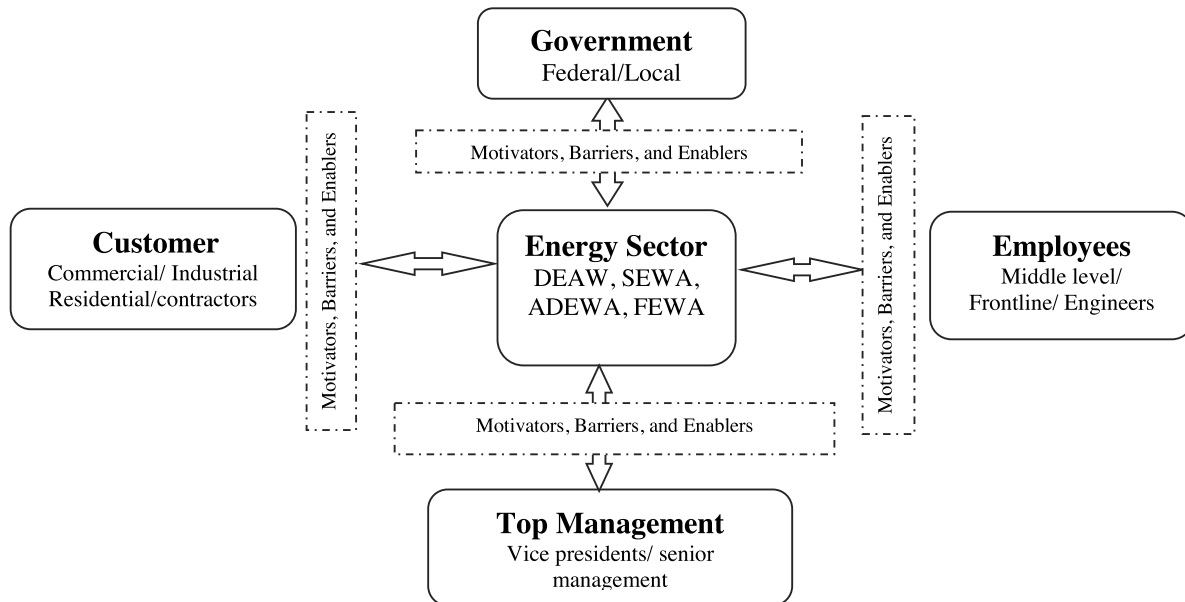


Fig. 3. CM motivators, barriers and enablers from multiple stakeholders' point of view.

Table 1
Interviews' breakdown.

#	Stakeholder categories	Details	Total No.
1	Top management	Vice presidents	3
		Senior manager	7
2	Employees	Middle management	12
		Front-line	18
		Engineers	9
3	Customers	Residential	15
		Commercials	8
		Industrials	3
Total No. of interviews			75

customer service employees, and nine field engineers at power plants as well as the new solar energy project of Dubai solar park 'Shams 1'. The details of the interviews are shown in Table 1.

Meanwhile, the government's perspective of change was determined through six credible sources, including articles, newspapers, government annual strategy reports, and official websites, speeches, and magazines pertaining to power producers (UAE State of Energy Report, 2015; MoEW, 2015; EWS-WWF, 2018).

In contrast, the data from customers were collected from three major consumer categories, including commercial, industrial, and residential. Three major consumers of electricity, such as a cement plant, sugar plant, and printing press, were interviewed in this process. Moreover, interviews were also inclusive of 15 residential customers, locals, and expatriate assorted owners of

flats and villas. Lastly, eight interviews were conducted with commercial base customers that covered both local companies and international organizations based in the UAE. Finally, the interviews also included four major power producers such as DEWA, ADWEA, FEWA, and SEWA. The interviews were planned for a combination of administration and on-site engineering level employee. The administration interviews were carried out in the headquarters of each organization. However, the completion of engineering level interviews took longer due to the imposition of security restrictions in entering power plants and solar plants. Each engineer was interviewed at site office and during working hours.

Each interview comprised of three parts. First, background information of each interviewee was collected to identify the stakeholder group and organizational level, which in turn, commands the level of knowledge and experience possessed. Second, each variable elaborately discussed how they interacted with different stakeholders' perception. Lastly, reflective and interpretative questions were raised, for example, "in your opinion what are the main enablers of CM?", "what factors affects the organizational transformation to renewable energy", "do you think change towards renewables requires government support financially, and why?". "If we assume that enablers have been all activated and fully applied, would it stop people from resistance?" It was ensured that the provision of information was not interrupted at any stage in order to allow them to talk freely and spontaneously to express their diverse perspectives. All answers varied based on

Table 2

CM motivators from stakeholders' perspective.

Customer	Top management	Employees	Governments
1. Easy user adoption	Project ROI maximization	Benefits of change	UAE vision 2021
2. Cost effectiveness	Continuity and survival	Visioning better tomorrow	Environment protection
3. Variety of alternatives	Capabilities and competencies (individual/corporate)	Out of the box-innovation	Efficiency, competitiveness and distinctiveness
4. Availabilities	Distinctiveness	Job pressure reduction	Energy conservation
5. Sustainability	Better achievement and results	Better job opportunities	Resource utilization and development
6. Accountability	Aligning practice with values (clean energy)	New skills and knowledge sharing	International competitions and high reputation
7. Efficient use of resources	Continuous improvements	New manager and colleagues	Assurance of sustainable developments
8. Eliminate complexity	Reduce waste and cost	Better life style	Enhancing production outcome
9. Accessibility	Trusting government's visions	Process/procedure simplification	Solving existing problems
10. Ethics	Competition and self-prove	Reduce manual works and efforts	Cost reduction and proper budget management
11. Life style and balance	Opportunity for learning	Applying health and safety	Future foresight
12. Less pollution	Innovation	Self-development	Government innovation projects
13. Alignment with international practice	Worldwide accreditations	Fairness and equality	Government accelerators approach
14. Self-sufficiency	Customer orientation	Customer orientation	Fulfilling people needs
15. Preserve resources	Updated with new approach	Better resource utilization	Infrastructure development
16. Innovation drivers	Resources utilization	Global requirements	Standards and applications
17. Expectation and demand	Enhance corporate reputation	Experiencing new challenges	Aligning with world standards
18. CSR	Global requirements	Continuous improvements	International accreditations
19. Health and safety	High demand Fulfilment	Capabilities and competencies	Pollution reduction
20. Smart government approach	Environmental aspects	Enhance work environment	Aligning with international laws and decrees
21. Fast delivery	Corporate objectives accomplishment	Recognition and rewards	Finding solutions for challenges
22. Eliminate waste	Governing performance management system	Opportunity for learning	Aligning with international association mandates
23. Happiness and lifestyle	Governments excellence reward	Easy user adoption	Focusing on customer centricity
24. Artificial intelligence (industrial)	Knowledge sharing (internal/external)		Readiness to future energy requirements
25. Feasible/viable	Governmental commitments		Coping with global developments
26. Fulfilment of demand	Challenges in the market's continued evolvement		Sufficiency and independence
27. Reliable (industrial)	Future competitiveness		Fulfilling consumption demand
28. Fairness and equality	Readiness		People happiness and satisfaction
29. Faith in government vision	Health and safety		Hub for the energy research centre
30.	Smart variable consumption		Reduction of resource waste
31.	Artificial intelligence		Artificial intelligence/ smart government
32.	Welfare and lifestyle		Raise the expectations ceiling
33.			High national income and ROI
34.			Improving people's lifestyle

the knowledge level demonstrated by the stakeholders. For example, vice presidents in the four governmental power producers were subjective in providing information about future projects and hurdles of the current process of renewable energy transformation. Contrarily, lower level hierarchy shared the majority of general information that tended to be more objective.

The employee-based interviews were targeted to specific categories that suit this research based on the sections which are in touch with CM implementation for green energy. The selection of employees for interviews was premised on the hierarchical position; the interview began from top management followed by middle management and then site engineers, who displayed the knowhow about renewable energy. Furthermore, employees from different administration levels of front-line desks and customer relations were also interviewed. It may be worthwhile to mention that all selected personals were experienced and had a role in previous and current CM within their respective organizations. Given the exploratory nature of this study, we exceeded the minimum criteria of 40 complete surveys to determine the sample size (Al-Amor and Hussain, 2017). The content validity in exploratory research is derived during concept elicitation and signifies the measurement property that assesses whether or not outcomes are comprehensive and adequately reflect the phenomenon for the population of interest (Brod et al., 2014). Upon collecting the data, commonality analysis is used as it provides a common input from all participants in a canonical way (Frederick, 1999).

4. Analysis and findings

4.1. Motivators of CM

A thorough analysis of the responses on the motivators of CM was presented randomly in Table 2. These motivators were reached after eliminating repetitive responses and grouping the responses relating to the same concept. The final list of motivators included 29 factors identified by customers, 32 by top managements, 23 by employees, and 34 by governments.

Meanwhile the common motivational elements towards change to renewable energy are extracted from Table 2 and depicted in Table 3. Then, the categories are separated into groups, such as A, B, C, and D, derived from Table 2, after which the core motivators for stakeholders from these categories are differentiated. To illustrate, groups E, F, G, H, I and J exhibit the similarities between two stakeholders, whereas groups K, L, M and N show the similarities based on three stakeholders. Lastly, group O exhibits the similarities among the four stakeholder's perspectives that are deemed rare and highly important.

It was found that employees are motivated by rewards, recognition, and leadership support. Meanwhile, top management is motivated by the factors of globalization, continuity, and survival, including the financial aspects of ROI, resources utilization, as well as cost reduction. However, the governments are targeting a different perspective of people happiness, lifestyle, and welfare

Table 3
Commonality in stakeholders' perceptions of CM motivators.

Stakeholders	Common factors	Groups
Employee	• Trust in Government's vision • Self-Development • Recognition and rewards • Simplification and easy user adoption	A
Top management	• Continuity and survival • Trust and support of the Government's vision • Improvements (corporate and individual level) • Customer and community orientation • Financial Aspects (ROI, resource utilization, cost reduction) • Globalization and accreditation and rewards	B
Government	• UAE vision 2021 • Environment protection • Efficiency and competitiveness • Assurance of sustainable developments • People happiness and satisfaction • Sufficiency and independence • Innovation and future foresight	C
Customers	• Product availability, accessibility, accountability, usability • Lifestyle • Trust in the Government's vision • Cost-effectiveness • High demand fulfilment • Fairness and equity	D
Employee–Top management	• Capability and competencies • Customer orientation • Health, safety and environment aspect • Innovation • Trust in the Government's vision • Continuous improvements	E
Employee–Government	• Customer orientation and happiness • Continuous improvements • Innovation	F
Employee–Customers	• Trust in the Government's vision • Simplification and easy user adoption • Health, safety, and environmental aspect • Fairness and equality	G
Top management–Government	• Financial aspects (ROI and Budget utilization) • Efficiency, competitiveness, and distinctiveness • People happiness and customer orientation • Innovation and future foresight • Assurance of sustainable developments	H
Top management–Customers	• Community welfare and lifestyle	I
Government–Customers	• Fulfil high demand	J
Top management–Employees–Customers	• Trust in the Government's vision • Lifestyle	K
Top management–Employees–Government	• Innovation. • Capability and competitiveness • Knowledge sharing	L
Top management–Customers–Government	• Fulfilling future energy demand • Environmental health and safety aspect	M
Employees–Customers–Government	• Innovation. • Sustainability	N
Top management–Customers–Employees–Government	• Community welfare and lifestyle • Environmental aspect • UAE brand and image	O

of UAE communities. For this reason, customers are the main motivators, supporters, and aligners of the governmental vision, as evidenced in their appreciation. Based on the analysis illustrated in Table 3, it is apparent that the relationships between top management and employees and between employees and customers have overlapping factors of trust in governmental vision and flexibility. Contrarily, the relationships between government and top management and between top management and employees have overlapping factors of the assurance of continuous sustainable development and improvement. However, the relationship between

top management, employees, and governments has revealed a common factor for innovation, capabilities, competitiveness, as well as knowledge sharing, although the four main factors vary with each group in the nature of requirement with elements. The trust placed on the government's vision factor denotes a vital element of motives in making the transition to green energy.

In addition, all stakeholders' categories agree on the common factors of enhancing UAE community welfare, lifestyles, and environmental aspects. In addition, the high perception of UAE brand and image were considered to be non-compromising.

Table 4

CM enablers from stakeholders' perspective.

Customer	Top management	Employees	Governments
1. Trust in the Government's vision	Team support and buy-in	Proper time frame	Direct communication and clear vision
2. Awareness of change direction	Articulating change value proposition	Proper communication plan	Building capacities of future leaders
3. Comprehensive media messages	Clear change objective	Performance and benefits	Legislations of innovation incubators
4. Cultural diversity	Focus skilled people	Empowerment and ownership	Government-integrated innovation system
5. Govern. financial support	Constant and focused plan	Leadership support and capabilities	Private/public sector partnership
6. Gradual change	People engagements	Flexibility	International research Centre (R&D)
7. Audience social participation	Extensive communication skills and plan	Attitude and open culture	Brainstorming platform
8. Ability/willingness to change	Supporting rules and regulation	Comprehensive training programmes	Availabilities of accurate data
9. Comfort and readiness	Other entities' cooperation	Gradual implementation approach (pilot bases)	Proper governance system (setting rules & responsibilities)
10. Open communication channels	Open organizational culture	Senses of belonging and citizenship	Enhancing organizations Knowledge sharing (locally/globally)
11. Infrastructure availability	Team ability and willingness	Clear transparent objectives	Innovative customer platform interaction
12. Fair tariffs	Stakeholders partnership	Motivation and rewarding system	Performance frame monitoring for UAE 2020
13. Loyalty and citizenship	Flexibility	Proper awareness	Flexibility
14. World class logistics service	Understanding business blueprint	Involvements in the change process	Effective suggestions system
15. Easy implementation	Diverse open culture	Openness to people opinion	Set reputable acknowledgeable international decree
16. Flexibility	Legal powers and supports	People willingness and enthusiasms	Strengthening integrated communications (Internal/ External)
17. Supported rules and regulations	Easy use technology	Organizational support	Dedicated R&D centres and budgets
18. Engagement	Authorization	Easy use of technology	Analysing organizations set up and structure
19.	Leader/ Govern. support	Effective communication tools	Infrastructure availability
20.	Supportive structure and process	Innovative tools and approach	Rewarding competition programmes
21.	Accuracy and precision		International global partnership
22.	Allocated and sufficient budget		Comprehensive training programme
23.	Governmental support		People involvement and trust
24.	High scenes of citizenship		

4.2. Enablers of CM

Based on the results of the aforementioned interviews, the final list of enablers is presented in Table 4. This list includes a random of 18 factors identified by customers, 24 by top managements, 20 by employees, and 23 by governments.

The next step is to determine the common views and perceptions for stakeholders. The common elements are extracted from Table 4, after which the enablers from stakeholders' views are categorized. Subsequently, the categories are segregated in groups such as A, B, C, and D based on Table 4, specifying the core enablers for each stakeholder group. In a similar manner, groups E, F, G, H, I, and J are based on the similarities between two stakeholders, and groups K, L, M, and N are premised on the similarities between three stakeholders. Lastly, group O is based on the similarities between the four stakeholders, which become rare and highly important.

The employee's common enabling factor is leadership support and involvement, in addition to effective communications and rewards. Meanwhile the top management's common factors of enablers were the availability of resources and supportive teams aside with their willingness. Similarly, common government enablers' factors were effective communications and partnership with the private sector. However, customers opined that the common enabling factors include the flexibility and effective communications to be updated about the latest rules and regulations, which were rated as the highest one.

In addition, most of the local customers stated a common factor of requesting government financial support in implementing and adapting alternative energy generators, such as solar panels. The request had a valid reason as the cost of the solar panels is extremely high and the return of investment is beyond 12 years. However, customers simultaneously foresee that the government

will understand the importance of partially assisting in payment or bare partial cost of solar panels in order to encourage them to use alternative energy sources.

The analysis depicted in Table 5 shows that the relationships between employees and government common factors show leadership capabilities and have unambiguous communication plans. Meanwhile, the relationship between employees and customers shows a similar overlapping factor of comprehensive and transparent communication plan, as well as seeking pilot and gradual change. The actor of gradual change is an essential point for customers and employees alike to ensure that change can be adequately deciphered and that implementation is accompanied with rational understanding. Alternatively, the relationship between governments, employees, and customers shows a common factor for the need of communication platforms. In this context, communication is considered to be a major common enabler factor among all stakeholders as well as a breakthrough in the success of change management. Similarly, the relationship between employees, governments, and top management shows a common factor of having a communication platform.

In summary, all four stakeholders (government, top management, employees, and customers) have a common factor for effective and transparent communication as a major enabler. However, another existing common factor indicated was willingness and flexibility. The enablers are considered to be a pillar where all stakeholders would use it as ladders to ensure that the change is successful. The stakeholder's enablers display a high strength and repetitive requirements for communication platforms. In contrast, the common factor of flexibility and willingness indicated a common factor, albeit without the same magnitude as communication.

Table 5
Commonality in stakeholders' perceptions of CM enablers.

Stakeholders	Common factors	Groups
Employee	• Leadership support • Effective communications and objectives • Motives and rewards • Involvement • Infrastructure availability	A
Top management	• Support rules and regulation • Team ability and willingness • Leaders/Governmental support • Availability of infrastructure and resources	B
Government	• Effective communication • Budgeting and resources • Infrastructure availability • Private and public sector partnership	C
Customers	• Flexibility • Effective communication • Infrastructure availability • Government financial support (UAE nationals only)	D
Employee–Top management	• Clear objectives. • Authorization and empowerment. • Open culture	E
Employee–Government	• Leadership capabilities • Clear objectives and communication plan	F
Employee–Customers	• Engagement • Comprehensive communication plan • Pilot and gradual change	G
Top management–Government	• Accuracy and precision • Resources and budget • Transparent and clear communication • Stakeholders partnership	H
Top management–Customers	• Infrastructure availability	I
Government–Customers	• Communication platform	J
Top management–Employees–Customers	• Communication platform	K
Top management–Employees–government	• Communication platform	L
Top management–Customers–Government	• Infrastructure availability	M
Employees–Customers–Government	• Communication platform • Leadership capabilities	N
Top management–Customers–Employees–Government	• Effective and transparent communication • Infrastructure availability • Flexibility	O

4.3. Barriers of CM

The answers extracted from the interviews were shortened and analysed in order to indicate the main barriers and commonality analysis from various perspectives of each stakeholder. The final list of barriers includes 20 factors that were randomly identified by customers, 19 by top management, 25 by employees, and 18 by government/owners, as depicted in Table 6.

Although the majority of changes approached by organizations are not without difficulties, governments, top management, employees, and customers are well aware of the barriers, and each side attempts to overcome it. The majority of barriers are attributed to the demands placed by organizations or leaders that exploit personal benefits or underlying targets beyond reality. Therefore, some organizations try to cover their leader's weaknesses by specifying different directions for employees and overcome barriers.

In addition, the categories are separated into groups such as A, B, C, and D, as evidenced from Table 6, specifying the core barriers from the categories created. To illustrate, groups E, F, G, H, I, and J are based on the similarities between two stakeholders, whereas groups K, L, M, and N based on the similarities between three stakeholders. Lastly, the group O is premised on the similarities between the four stakeholder's views, which become rare and highly important.

The overall analysis shows a glimpse of common barricading factors. The employees' group has wrong perception the highest factor that made them fear change in the first place; the perceptions include work stress, unemployment, and unexpected obstacles, all factors that take them away from their comfort zone. Top management indicated common factors of employee resistance, strict rules, and limitations of budget as well as resources. In the meanwhile, governments would have an overlapping barrier factor of budget misuse, contradicting feedback, and global stability. Customers have indicated more common factors of cost and possibility of rapid price hiking.

As evidenced in Table 7, the relationship between governments and customers indicate a common factor of influence: global stability. In addition, the relationship between top management and customers reveal a common barrier of the cost of change and risk of failure. The lack of knowledge and the fear of change are also emphasized by the relationship observed between employee and customer groups. However, the relationship between the top management, employees, and governments suggests that poor communication and complexity of process are the main common barriers. Lastly, all stakeholder groups (government, top management, employee, and customers) face common barrier factors of the fear of global stability and the concomitant complications of change.

Fig. 4 illustrates the commonality in stakeholders' view of CM motivators, enablers, and barriers. The areas of intersection

Table 6

CM barriers from stakeholders' perspective.

Customer	Top management	Employees	Governments
1. Resistance to change	Not tolerable going forward	Minute employee involvement	Costs of change
2. Confusion and fear	High risk of rework	Fear of stress and confusion	Low return of investment
3. Absence of a communication plan	Fear of unexpected obstacles	Fear of misleading management	Fear of failure
4. Gap in knowledge	Unclear objectives	Resistance to change	Fear of unseen obstacles
5. Negative past experience	Lack of empowerment	Different agenda	Weakness of enablers
6. Fear of opposite outcomes	Poor communication	Risk of rework	Capabilities of the manpower
7. Inability to adapt change	Inability/willingness to change	Waste of time	Appreciation of the community
8. Fear of extra cost	Complex change processes	Extremism (<i>certain regional/ethnics parties</i>)	Lack of time
9. Realization of change necessity (<i>why</i>)	Maturity level and organization size	Negative past experience	Unclear vision of people
10. Realization of change methods (<i>How</i>)	Insufficient allocation of resources	Perception of change nature (<i>stereotype</i>)	Resistance to change
11. Complex requirements	Poor team member morals	Fear of unexpected obstacles	The pressures of international laws
12. Fear of unknown and unfamiliar	Fear of failure	Unclear objectives	Poor community awareness
13. Misplaced prioritization	Time pressure	Fear of unemployment (<i>losing their jobs</i>)	High risk of investment
14. Low engagement	Restricted rules/regulations	Wrong perception of budget wastage	Fear of misused empowerment/budget
15. Difficulty of adaption	Disturbance of power hierarchies	Infective communication strategy	Lack of an effective communication strategy
16. No real improvements	Inter-dependencies in roles	Opposing psychology	Contradicting feedback of people
17. Lack of focus	Employees' resistance	Complexity of change processes	Global stability (<i>unexpected financial crisis</i>)
18. Time pressure	Closed and extremism cultures	Fear of poor outcome	Poor management
19. lack of desire	Poor team member-morals	Lack of proper focus	
20. Rumours		No clear accountability	
21.		Non-flexible rules	
22.		Ineffective leadership (<i>style, attitude, skills</i>)	
23.		Uncelebrated successes (<i>ignorance</i>)	
24.		Rumours	
25.		Time pressure	

Table 7

Commonality in stakeholders' perceptions of CM barriers.

Stakeholders	Common factors	Groups
Employee	• Fear (Stress, unemployment and unexpected obstacles) • Wrong perception	A
Top management	• Insufficient budget and resources • Restricted rules and regulations • Employee resistance • Fear obstacles and failure • Closed and extremism cultures	B
Government	• Budget misuse • Contradicting feedback • Fear of global stability	C
Customers	• Fear of cost implication and hikes • Complexity of new adaptations	D
Employee–Top management	• Time constrain pressure • Poor communication and knowledge sharing	E
Employee–Government	• Leadership capability	F
Employee–Customers	• Gap of knowledge • Fear of change	G
Top management–Government	• Risk of failure • Cost of change	H
Top management–Customers	• Fear of opposite outcomes • Cost of change	I
Government–Customers	• Insufficient communication channels • Fear of global stability	J
Top management–Employees–Customers	• Fear of communication failure • Restricted rules and regulation • Adaption of change	K
Top management–Employees–Government	• Poor communication channels • Complexity of the change process • Fear of failure	L
Top management–Customers–Government	• Cost of change	M
Employees–Customers–Government	• Ineffective communication	N
Top management–Customers–Employees–Government	• Fear. • Complication of change	O

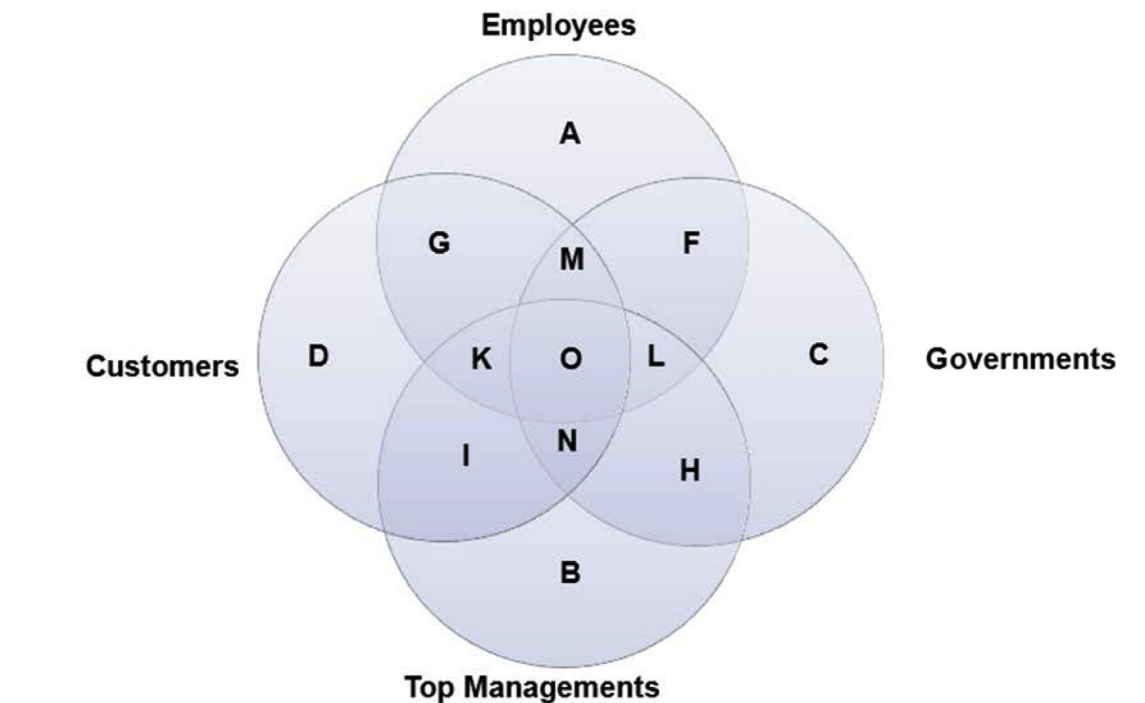


Fig. 4. Commonality of stakeholders' views of CM barriers, enablers, and motives.

denote the commonality among the stakeholder groups, with the intersection “O” mirroring the intersection amongst all four stakeholders.

The inputs from the participants were scrutinized to address the objective of the main study. Concomitantly, similar answers were filtered to avoid repetitiveness and duplication of the main theme. Consequently, other answers serving the same meaning and theme objective were merged in order to serve the main theme with other valuable inputs. The themes presented helped in highlighting the perspective of each organization and employee as well as support the main theme such as managers, skills, or leadership attitude.

5. Discussion and conclusion

This research presents an exploration of CM initiatives towards green energy and trailing rules, regulations, and processes that can be applicable on all layers of the UAE community. This research is unique in that it offers the first insight into adopting CM while transforming the services to alternative energies and how the implementation process is impeded and facilitated. In this regard, the research adds a novel element that has never been previously explored among customers, employees, top management, and governments concerning the change and transformation to use green energy in the UAE. This research used a qualitative approach through face-to-face interviews with senior and experienced employees along with major users of energy. Equally, governments' views of UAE vision 2021 and current projects were discussed through articles and newspapers that support the government's vision of energy across the UAE.

As analysed and scrutinized, the main motives revolved around two streams of work environment and benefits. The top management were driven by accreditation and benefits, whereas the remaining stakeholders were driven by the perception resulting from outcome. The barriers were having a high contradiction depending on the concerned people's age range and hierarchical position. Meanwhile it is paramount to mention that most of the participants are well aware of the government's approach

towards renewable energy that was updated with all the projects carried out. Overall findings in general corroborate previous studies made on CM and pinpoint some factors that other studies mentioned briefly on same subject. Such as Cooper (2012) pointed out that funding is major barrier for the CM. According to Kailash (2005), the perception of employees plays an important role in resisting change. Consequently, fear is a major subject in change and plays a critical role in creating barriers for the successful implementation of CM.

The results offer deep insight of stakeholders' opinions towards CM for green or alternative energy. Such opinions are extracted in balance among the stakeholders, considering experience, their existing knowledge, and previous changes undergone by them. Fig. 5 shows the outline based on the perspectives of multiple stakeholder groups on CM towards green energy. The decision to introduce and implement changes towards green energy has had a widespread effect on the UAE community, notwithstanding the changing process and structuring in energy organizations. This study can be enhanced further by widening the research to encompass aspects of adoption on a micro-level and technical details concerning the difficulties with customers. Yet, the study shows common factors that most of the stakeholders claim as their singular objective.

The driving elements affecting the decision and each layer of the process have its own motives, enablers, and barriers. The importance of this study is evidenced in analysing each factor motivating CM to green energy and possessing/deploying the means of change towards the stated objective. Lastly, identifying barriers would create a proper anticipation and troubleshooting to a single future decision for alternative energy. In addition, spreading positive attitude and supporting with available tools would make it easier to reduce or overcome barriers with fewer surges of operation and enthusiast communities.

The study helps energy organizations prioritize the areas they need to focus on their aims and objectives towards green energy. The study addresses the leveraging points while identifying the bottlenecks and enabling the organizations to ensure customer satisfaction. In addition, it provides energy companies with clear

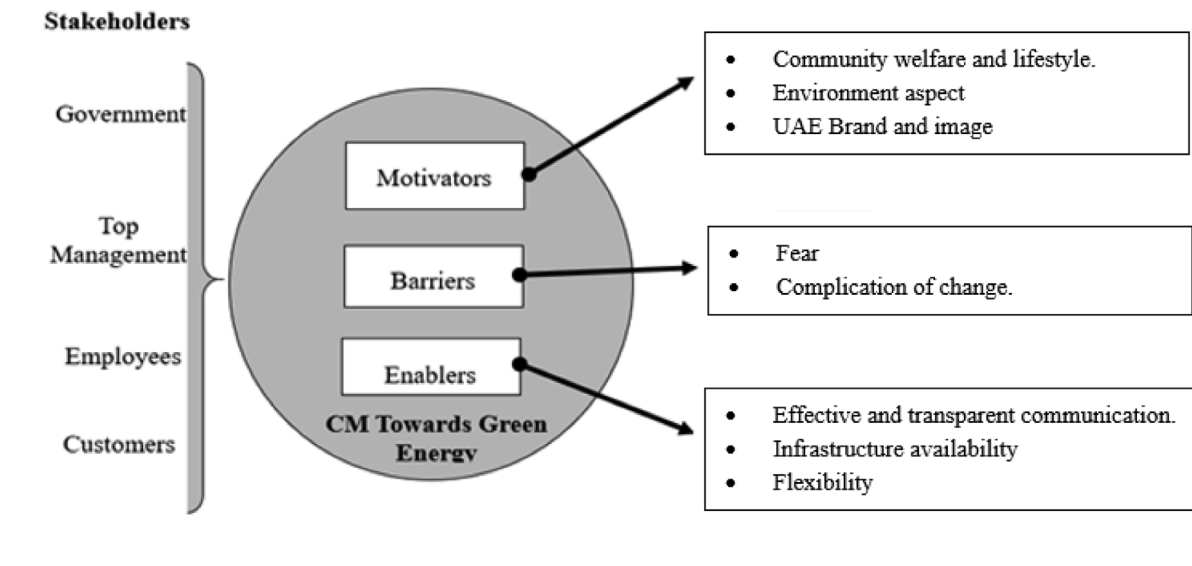


Fig. 5. Comprehensive stakeholders' views of CM to green energy.

points they need to address while transforming and managing change. At the same time, this study enables companies to anticipate the level of severity and allocate their efforts/resources towards factors that accelerate the application of CM and minimize failure risks. The study also assumes significance for energy companies to analyse their current situation and apply necessary changes in their strategies, workgroups, and services, facilitating what is necessary and determining the stages at which each element needs to be implemented.

6. Limitation and future research directions

This research explores the critical factors affecting CM in green energy from multiple stakeholders' perspective in the sustainable energy sector; therefore, future studies should explore further areas that are not covered in this research, such as the following areas:

- The validity of the identified factors (motivators, enablers and barriers) in other organizations and sectors, users, such as services, manufacturing etc.
- The similarities and differences between the same factors with neighbouring countries.
- A comprehensive set of factors affecting environmental, economic, and social outcomes in a society.

7. Managerial implications

In today's world of revolutionary technology and short-term market changes, it is important to realize that ensuring community-wide application of green energy assumes greater importance than having green energy without any purpose. Thus far, the application of the alternative energies has been limited to only a few specific areas such as producing electricity to support the electricity network for main providers, such as DEWA, ADWEA SEWA and FEWA. This is because most of the energy producers applied change on the basis of certain outcomes and never considered the change itself.

Other initiatives and policies are currently underway in the UAE including Dubai's green-building directive, Abu Dhabi's sustainable building methodology (Estidama), and a new energy policy that still lacks content and implementation (The National, 2009). In order to implement an effective and sustainable change

in the energy sector, it is important to develop a solid strategy rather than alter objectives at every obstacle. Consequently, this study:

- 1- Aids the energy organization to smartly plan their objectives, keeping in mind the motives to drive them forward, and organize tools through enablers and anticipating barriers.
- 2- Fosters the efforts of stakeholders, allowing them to form a better coordination to adapt flexibility and better communication schemes, and to concentrate on common factors while also considering other factors discussed in the research.
- 3- Allows energy organizations to better establish their knowledge sharing flow both internally and externally to ensure better processes and trouble-free adaption of green energy.
- 4- Ensures that employees and top management work in synergized groups and avoid situations that can lead to misunderstanding of the new laws of alternative energy outcomes.
- 5- Sets a solid strategy that services all levels of the stakeholders and steers all working groups in the same direction with higher accountability.
- 6- Streamlines processes and allows more innovative ideas to receive recognition in order to enhance the efficiencies among stakeholders.

References

- Al-Amor, R., Hussain, M., 2017. An assessment of green practices in a hotel supply chain: A study of UAE hotels. *J. Hosp. Tourism Manage.* 32, 71–81.
- Alasadi, R., Askary, S., 2014. Employee involvement and the barriers to organizational change. *Int. J. Inform. Bus. Manage.* 6, 1–10.
- Anderson, Dean, Anderson, Lind Ackerman, 2001. *Beyond Change Management; Advance Strategies for Today's Transformational Leader.* Jossey-Bass/Pfeiffer, ISBN: 0-7879-5645-7.
- Bahgat, G., 2015. *The Changing Energy LandScape in the Gulf : Strategic Implications.* Gerlach Press, Berlin, Germany, p. 43.
- Barone, M.J., Norman, A.T., Miyazaki, A.D., 2007. Consumer response to retailer use of cause-related marketing: is more fit better?. *J. Retailing* 83 (4), 437–445.
- Bartunek, J.M., Balogun, J., Do, B., 2011. Considering planned change anew: stretching large group interventions strategically, emotionally, and meaningfully. *Acad. Manage. Ann.* 5 (1), 1–52.
- Becker-Olsen, K.L., Cudmore, A.B., Hill, R.P., 2006. The impact of perceived corporate socialresponsibility on consumer behavior. *J. Bus. Res.* 59 (1), 46–53.

- Beer, M., Nohria, N., 2000. Cracking the code of change. *Harv. Bus. Rev.* 1–8.
- Bin Taher, N., Krotov, V., Silva, L., 2015. A framework for leading change in the UAE public sector. *Int. J. Organ. Anal.* 23 (3), 348–363.
- Brod, M., Pohlman, B., Tesler Waldman, L., 2014. Qualitative research and content validity. In: Michalos, A.C. (Ed.), *Encyclopedia of Quality of Life and Well-Being Research*. Springer, Dordrecht.
- Brown, T.J., Dacin, P.A., 1997. The company and the product: corporate associations and consumer product responses. *J. Mark.* 61 (1), 68–84.
- Bruce, Lloyd, 2000. Leadership and power. *Leadersh. Organ. Dev. J.* 21 (5), 162–163.
- Burke, W.W., 2013. *Organization Change: Theory and Practice*. Sage Publications.
- Burnes, B., 2004. *Managing Change: A Strategic Approach To Organizational Dynamics*, fourth ed. Prentice Hall, Harlow.
- Burnes, B., 2005. Complexity theories and organizational change. *Int. J. Manage. Rev.* 7 (2), 73–90.
- Carter, E., 2008. Successful change requires more than change management. *J. Qual. Participation* 31 (1), 20–23.
- Carter, C., Rogers, D., 2008. A framework of sustainable supply chain management: Moving toward new theory. *Int. J. Phys. Distrib. Logist. Manage.* 38 (5), 360–387.
- Cavanaugh, N., Gooderham, P.N., 2007. Cultural intelligence: factors and measurement. Available from <http://bora.uhh.no/bitstream/2330/1889/1/Cavanaugh2008.pdf>.
- Cooper, R.N., 2012. Financing for climate change. In: *Energy Economics*, Vol. 34. Elsevier BV, <http://dx.doi.org/10.1016/j.eneco.2012.08.040>, 0140–9883.
- Daft, R.L., Marcic, D., 2004. *Understanding Management*, fourth ed. Mason, OH: South-Western.
- Drumwright, M.E., 1996. Company advertising with a social dimension: the role of noneconomic criteria. *J. Mark.* 60, 71–87.
- Earley, P.C., Peterson, S.R., 2004. The elusive cultural chameleon: Cultural intelligence as a new approach to intercultural training for the global manager. *Acad. Manage. Learn. Educ.* 3 (1), 100–115.
- Edmons, J., 2011. Managing successful change. *Ind. Commer. Train.* 43 (6), 394–353.
- Eggers, W., Bellman, J., 2016. *The Journey to Government's Digital Transformation*. Deloitte University Press.
- EWS-WWF 2018. Ministry of Energy and Industries, 2018. Enabling the UAE Energy Transitions. Top Ten renewable areas for renewable energy policy makers. 5.
- Farrell, J.B., Flood, P.C., MacCurtain, S.M., Hannigan, A., Dawson, J., West, M., 2005. CEO Leadership, top team trust and the combination and exchange of information. *Irish J. Manage.* 26, 22–40.
- Foster, J.B., 2002. *Ecology Against Capitalism*. Monthly Review, New Your.
- Frederick, B.N., 1999. Partitioning variance in the multivariate case: A step-by-step guide to canonical commonality analysis. In: Thompson, B. (Ed.), *Advances in Social Sciences Methodology*, Vol. 5. JAI Press, Stamford, CT, pp. 305–318.
- Gilley, A., Gilley, J., McMillan, H., 2009. Organizational change: Motivation, communication, and leadership effectiveness. *Perform. Improv.* 75–94. <http://dx.doi.org/10.1002/piq.20039>.
- Graetz, F., 2000. Strategic change leadership. *Manage. Decis.* 38 (8), 550–562.
- Griffin, C., Green, A., Martins, M., 2016. *Advanced Science and the Future of Government*. Intelligence Unit Limited, Dubai.
- Gulf News Published: January 17, 2018 18:21. UAE will always be a global leader in clean energy. <https://gulfnews.com/uae/government/uae>.
- Hans, H.J., Owen, L., Neus, A., 2009. Stop improvising change management!. *Strategy Leadersh.* 37 (2), 38–44. <http://dx.doi.org/10.1108/10878570910941217>.
- Hawken, P., Lovins, A.B., Lovins, L.H., 1999. *Natural Capitalism: The Next Industrial Revolution*. Little, Brown, New York.
- IEO, International Energy Outlook. 2018. Presentation, 6, EIA, International Energy Outlook 2018 annual report and presentation.
- Kailash, J., 2005. Understanding user resistance and acceptance during the implementation of an order management system: A Case study using the equity implementation model. *J. Inform. Technol. Case Appl. Res.* 7 (1), 6–20.
- Kotter, J.P., 2008. *A Sense of Urgency*. Harvard Business Press, Boston, MA.
- Kovel, J., 1999. The justifiers: A Critique of Julian Simon, Stephan Schmidheiny, and Paul Hawken on Capitalism and nature. *Capital. Nat. Soc.* 10 (3), 3–36.
- Levasseur, R.E., 2001. People skills: change management tools – Lewin's change model. *Interfaces* 31 (4), 71–83.
- Levin, I.M., 2000. Vision revisited: Telling the story of the future. *J. Appl. Behav. Sci.* 36 (1), 91–107.
- Lewis, L.K., 2011. *Organizational Change: Creating Change Through Strategic Communication*, Vol. 4. John Wiley & Sons, West Sussex.
- Luecke, R., 2003. *Managing Change and Transition*. Harvard Business School Press, Boston, MA.
- Magsaysay, J.F., Hechanova, M.R., 2017. Building an implicit change leadership theory. *Leadersh. Organ. Dev. J.* 38 (6), 834–848.
- Marchand, D.A., Kettinger, W.J., Rollins, J.D., 2001. *Information Orientation: The Link To Business Performance*. Oxford University Press, New York, NY.
- Mari, Luomi, 2009. *Middle East Policy*, XVI, (4) Winter 2009.
- Miller, D., Madsen, S., John, C.R., 2006. Readiness for change: Implications on employees' relationship with management, job knowledge and skills, and job demands. *J. Appl. Manage. Entrep.* 11 (1), 3–16.
- MoEW (UAE Ministry of Environment and Water). 2015. United Arab Emirates State of Green Economy Report 2014, MoEW, Dubai. 121.
- Moran, J.W., Brightman, B.K., 2001. Leading organizational change. *Career Dev. Int.* 6 (2), 111–118.
- MRCGI and SRI. 2016. *Edge of Government: Public Innovations from Across the Globe*. Dubai: The Mohammed Bin Rashid Centre for Government Innovation & SRI International Center for Innovation Strategy and Policy.
- Noh, N.M., Chen, K.C., Bahar, A., Zainuddin, Z.M., 2016. Analysis of oil price fluctuations. 1750. 060011. 10.1063/1.4954616. Osborn, R. N. 2011. *Organizational behavior* (eleventh ed.) (p. 253). New York, NY: Wiley.
- Petroleum Economist, Oct. 2015, 1. UAE Talks up Clean Energy Spend.
- Rabia, F., Aswad, N.G., Androulaki, S., Hawila, D., Mezher, T., 2013. Renewable energy in the GCC: status and challenges. *Int. J. Energy Sector Manage.* 7 (1), 84–112.
- Rebecca, N., 2015. Harvard Business Review, Leadership & Managing People. <https://hbr.org/2015/07/how-to-co-lead-a-team>.
- Rieley, J.B., Clarkson, I., 2001. The impact of change on performance. *J. Change Manage.* 2 (2), 160–172.
- Rosenberg, S., Mosca, J., 2011. Breaking down the barriers to organizational change. *Int. J. Manage. Inform. Syst.* 15 (3), 139–146.
- Schermerhorn, J.R., Hunt, J.G., Osborn, R.N., 2011. *Organizational Behavior*, eleventh ed. Wiley, New York, NY, p. 253.
- Senge, P., 2006. *The Fifth Discipline: The Art and Practice of the Learning Organization*, second ed. Century, London.
- Senior, B., 2002. *Organisational Change*, second ed. Prentice Hall, London.
- Smith, N.C., 1994. The new corporate philanthropy. *Harv. Bus. Rev.* 72 (3), 105–116.
- Todnem, R., 2005. Organizational change management: A critical review. *J. Change Manage.* 5 (4), 369–380. <http://dx.doi.org/10.1080/14697010500359250>.
- Toor, S., Ogunlana, S., 2009. Ineffective leadership: investigating the negative attributes of leaders and organisational neutralisers. *Eng. Constr. Archit. Manage.* 16 (3), 254–272.
- Toufic, M., Dawelbait, G., Abbas, Z., 2012. Renewable energy policy options for Abu Dhabi: Drivers and barriers. *Proj. Manage. J.* 42, 315–328.
- Turner, J.R., Muller, R., 2005. The project manager's leadership style as a success factor on projects: a literature review. *Project Manage. J.* 36 (2), 49–61.
- Toufic, M., Goldsmith, D., Choucri, N., 2011. *J. Energy Eng.* 137 (4), 2011.
- UAE State of Energy Report 2015. ISBN 978-9948-22-582-9.
- Wanberg, C.R., Banas, J.T., 2000. Predictors and outcomes of openness to changes in a reorganizing workplace. *J. Appl. Psychol.* 85 (1), 132–142.
- Webb, D.J., Mohr, L.A., 1998. A typology of consumer responses to cause-related marketing: from sceptics to socially concerned. *J. Public Policy Mark.* 17, 226–238.
- Yaseen, Z., Okour, A., 2012. Managing organizational change: decisions maker perceptions in the UAE manufacturing industry. *IJRSM Int. J. Res. Stud. Manage.* 1 (1), 15–20.

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