

Investigating the Economic Growth of Energy Supply the External Macro Environmental Factors that Affecting the Position of the Company: A Case of Abu Dhabi Water and Electricity Authority (ADWEA)

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Abstract-- The Emirate Public expenditure on public services is the most important national development and promoting programs. The Emirate Electricity and Water services help to reduce poor quality as well as improving the standard of life in the UAE.

The major objective of this study is to examine the external macro environmental factors that might be affecting the position of business. The present study uses PESTEL analysis (Political, Economic, Social, Technological, Environmental and Legal) to describe a framework of macro-economic environmental factors used in the environmental scanning component of strategic plans of Electricity and Water supply and Expenditure. And SWOT analysis. ADDC (Abu Dhabi Distribution Company) belongs to Abu Dhabi Water and Electricity Authority (ADWEA) companies. It established in Nov 1998, and it is the responsible for distributing water and electricity services to all customers in Abu Dhabi emirate except Al Ain region. The core business for the ADWEA is planning, designing, construction, and operations of the Abu Dhabi water and electricity distribution network.

In this study, the researcher highlights the main points of different economic incomes from funding and enhancing the energy efficiency for policy makers.

Keywords-- Economic Growth, Public Expenditure PEST Analysis, SWOT analysis, Strategic Management, and Case Study.

I. INTRODUCTION

The UAE has shown tremendous developments with respect to electricity production and consumption [1]. The UAE is expected to post nearly 40% growths in electricity generation by 2020 to match growing demand [12].

The production of electricity and the desalination of water are dominated by large-scale operators using conventional technologies such as gas turbines and thermal desalination, common in the region.

Such arrangements, where depleted steam from steam generators is used to help desalinate water, are known as co-generation operations [13].

Demand Customer demand for both water and electricity continues to grow, and to a large extent reflects the expansion of the Emirate.

In this paper the Combination of PESTEL analysis (Political, Economic, Social, Technological, Environmental, and legal analysis) and SWOT analysis : describes a framework of macro-environmental factors used in the environmental scanning component of strategic management [2].

The suggested technique will be applied in one of the most famous power company in UAE. ADDC (Abu Dhabi Distribution Company) is one of Abu Dhabi Water and Electricity Authority (ADWEA) companies. It established in Nov 1998. It is responsible for distributing water and electricity services to all customers in Abu Dhabi emirates except Al Ain region. Its core business is the planning, design, construction, and operation of the Abu Dhabi water and electricity distribution network [14].

The first part in this paper will define the PESTEL analysis and then SWOT analysis, A brief investigation about Abu Dhabi Distribution Company will be introduced in the next section. Finally the PESTEL analysis is implemented on ADDC, as it is our case study, to Investigating the economic growth of energy supply and expenditure in ADDC [15].

II. PESTEL ANALYSIS [12][13]

Aside from the company's internal resources and industry factors, there are several other macro-economic factors that can have a profound impact on the performance of a company.

In particular situations such as new ventures or product launch ideas, these factors need to be carefully analyzed in order to determine how big their role in the organization's success would be. One of the most commonly used analytical tools for assessing external macro-economic factors related to particular situation is PESTEL Analysis.

PESTEL is an acronym for Political, Economic, Social, Technological, Environmental, and Legal. This analysis is used to assess these four external factors in relation to your business situation. Basically, a PESTEL analysis helps you determine how these factors will affect the performance and activities of your business in the long-term.

Political factors are basically to what degree the government intervenes in the economy. Government regulations and legal factors are assessed in terms of their ability to affect the business environment and trade markets. Specifically, political factors include areas such as tax policy, labor law, environmental law, trade restrictions, tariffs, and political stability.

Economic factors include economic growth, interest rates, exchange rates and the inflation rate. These factors have major impacts on how businesses operate and make decisions. Businesses examine the economic issues that are bound to have an impact on the company.

Social factors explains how a business can analyze the socio-economic environment of its market via elements like the cultural aspects and include health consciousness, population growth rate, age distribution, career attitudes and emphasis on safety. Trends in social factors affect the demand for a company's products and how that company operates.

Technological factors include technological aspects such as R & D activity, automation, technology incentives and the rate of technological change. They can determine barriers to entry, minimum efficient production level and influence outsourcing decisions. Furthermore, technological shifts can affect costs, quality, and lead to innovation.

Environmental factors include ecological and environmental aspects such as weather, climate, and climate change, which may especially affect industries such as tourism, farming, and insurance.

Legal factors include discrimination law, consumer law, Laws regarding pollution and recycling ,antitrust law, employment law, and health and safety law. These factors can affect how a company operates, its costs, and the demand for its products.

III. SWOT ANALYSIS [13]

SWOT analysis was created in the 1960s by business gurus Edmund P. Learned, C. Roland Christensen, Kenneth Andrews and William D. Book in their book "Business Policy, Text and Cases" (R.D. Irwin, 1969). While the tool was originally intended for business use, it has since been adopted to aid personal development.

The **SWOT** analysis is an excellent tool for organizing information, presenting solutions, identifying roadblocks and emphasizing opportunities [10].

"Performing a **SWOT** analysis is a great way to improve business operations and decision-making" said Andrew Schrage, founder and CEO of Money Crashers. "It allowed me to identify the key areas where my organization was performing at a high level, as well as areas that needed work. Some small business owners make the mistake of thinking about these sorts of things informally, but by taking the time to put together a formalized **SWOT** analysis, you can come up with ways to better capitalize on your company's strengths and improve or eliminate weaknesses" [11].

While the business owner should certainly be involved in creating a **SWOT** analysis, it could be much more helpful to include other team members in the process.

A **SWOT** analysis focuses entirely on the four elements included in the acronym, allowing companies to identify the forces influencing a strategy, action or initiative. Knowing these positive and negative elements can help companies more effectively communicate what parts of a plan need to be recognized [9].

When drafting a **SWOT** analysis, individuals typically create a table split up into four columns to list each impacting element side-by-side for comparison. Strengths and weaknesses won't typically match listed opportunities and threats, though they should correlate somewhat since they're tied together in some way.

Figure 1 shows the interrelations between the main factors of the PEST analysis and the external factors of the **SWOT** analysis (opportunities and threats).

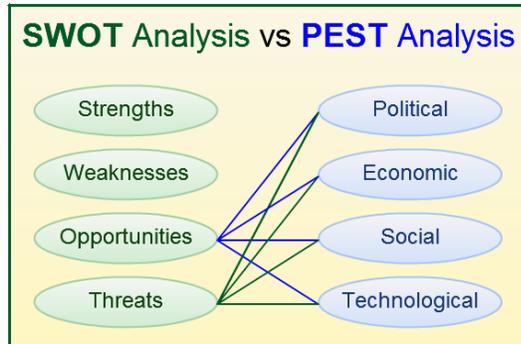


Figure 1: Relation between BEST and SWOT

IV. ABU DHABI DISTRIBUTION COMPANY (ADDC):

ADWEA is a public organization wholly owned by the Abu Dhabi government with a separate legal identity and financial and administrative independence. ADWEA determines all business relating to the formulation, development and implementation of the policy of the government in relation to the water and electricity sector in Abu Dhabi [2].

ADWEA is the 100% owner of ADDC. All capital required by ADDC is provided via direct equity investment from ADWEA. Over the last few years, ADWEA has permitted increased levels of autonomy to each of its subsidiaries including ADDC. However, ADDC continues to operate within the overall policy framework set by ADWEA, particularly in the areas of personnel, procurement and financial policy [5].

Demand Customer demand for both water and electricity continues to grow, and to a large extent reflects the expansion of the Emirate.

Figure 3 shows the number of units supplied in any one year but is not a measure of peak demand, which normally occurs in the latter part of the summer when many people return to Abu Dhabi for the start of the new school year [7].

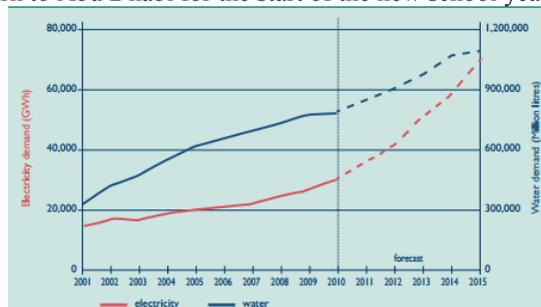


Figure 3: Electricity demand (Various years) [17,18]

Price controls Network licensees and ADWEC are regulated using ‘price controls’. Such controls limit the prices and revenues that licensees can recover from customers and include performance standards to protect the quality of service.

This is illustrated in Figure 2, with each licensees’ Maximum Allowed Revenue (MAR) being made up of an estimate of its operating costs, regulatory depreciation and regulatory returns. [12]

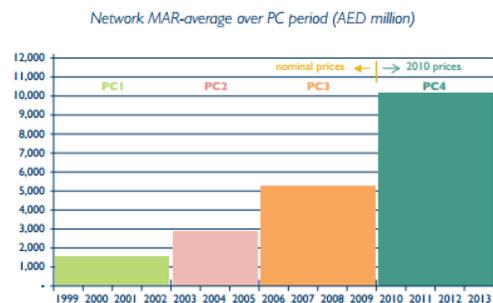


Figure 2: Network MAR-average over PC period (Various years) [7]

V. PESTEL FACTORS FOR ADDC

Political analysis:

Free water bills in Abu Dhabi and reduce electricity bills cost by 80% for UAE locals. Political stability is a strong basement for ADDC. Also reduce 50% for residents as a support from the Abu Dhabi government.

The company provides water and electricity services with the highest quality that comply with international Specifications Organizations (ISO) and to apply the standards of Regulation and Supervision Bureau (RSB) in Abu Dhabi. The company has been awarded several international awarded.

Economic analysis:

The company supports its customers by providing the consumers with digital meters to read electricity and water bills at competitive prices.

Providing the water and electricity meters at competitive prices for consumers compared to other global companies as government supporting (AED 500 for one meter from ADDC and compared to about AED 2000 for one meter from outside) [19]. Wiring and electrical connections costs are free from the company to the consumers.

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This Consent must not adversely affect the operations and costs of ADDC's licensed activities. ADDC shall ensure the financial ring fencing between the activities authorized under this Consent and its Licensed Activities and ensure that there is no cross-subsidy [16].

Social analysis:

Educate customers about water and electricity consumption through the media and magazines published by the company. The company unveils new utility bills for water and electricity to change the consumer behaviors.

Exempt some institutions such as hospitals, mosques and others like consolation from water and electricity bills.

Provide scholarships to UAE students to study engineering fields inside and outside the country and providing them with employment opportunities after graduation [20].

Technological analysis:

There are automated payment devices for water and electricity bills as well as the payment via the Internet and smart phones. Provide a free-number (8002332) working 24 hours to respond to customer inquiries.

Contracting with an IT companies to resolve any technical problems in the company, (ADDC contracting with "Injazat" Company to resolve any problems occurs in ADDC software and hardware systems)[[20].

Environmental Factors:

One of the main factors is the existence of a unique Research Centre (RC) on both the local and regional levels.

RC conducts state of the art research on water and electricity production, transmission and distribution.

Also RC is engaged in areas of scientific and applied researches on modern and innovative technology (power generation, water desalination and conservation of environment).

The RC is interested in the measurement of carbon emissions in the atmosphere and control the emission rates according to the applicable international standards, using specific techniques and devices provided by ADWEA.

Participated in the environment exhibition and conference held in Abu Dhabi in January 2007 along with specialist exhibitors and institutions concerned with environment and energy sector from the Middle East, North Africa, Europe the United States and others.

Launched many environmental initiatives aiming to conserve natural resources, reduce pollution and promote awareness among community members on the importance of environment conservation, waste recycling and its sorting and disposal of in an environmental friendly manner to safe future generations[18].

Adopted the application of 'management without papers' policy by adopting electronic correspondence between departments and staff in a distinct environmental initiative aiming at reduction of waste paper and environment preservation

Support the activities of environmental institutions and initiatives for protection of the environment in addition to water and electricity the conservation campaigns in collaboration with a number of authorities, institutions and other international and local environmental organizations [5].

Legal Factors:

Bureau means the Regulation and Supervision Bureau for the Water, Wastewater and Electricity Sector in the Emirate of Abu Dhabi as established under Law No (2) of 1998 concerning the Regulation of the Water and Electricity Sector in the Emirate of Abu Dhabi, as amended from time to time.

License means ADDC's Water and Electricity Distribution and Supply License, document reference ED/L01/008, issued by the Bureau to ADDC and including any subsequent revisions, modifications and derogations made thereto from time to time.

This Consent grants ADDC's temporary relaxation from the minimum prescribed limits for TDS and residual chlorine contained in the Water Quality Regulations in respect of drinking water supplied.

Stop working during afternoon's times to apply the rules of The Ministry of Labor and workers in the United Arab Emirates and to apply the instructions of the Health, Safety, Environment and Quality (HSEQ) Department in the company.

VI. SWOT FACTORS FOR ADDC

Strengths' Points:

- ADDC Established as sole provider of a water and electricity service paying national rates.

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- ADDC Established name - everyone knows
- Well-trained workforce and external validation of quality.
- Services immediately available to everyone in the Country.
- Satisfaction levels of water and electricity service users very high.
- Operate the business following the highest ethical and moral standards
- Honor commitments and treat everyone fairly and with respect
- Treat employees with respect
- Provide a healthy and safe workplace
- Focus on recruiting, developing and retaining a skilled workforce
- Recognize and reward achievement
- Empower people to maximize their potential and contribution and promote open and honest communication
- ADWEA realizing the importance of education in building the future generations and their role in the integrated development process, has allocated part of its social responsibility to support this vital sector
- ADWEA donated 600 computers for educational institutions and educational institutions.
- ADWEA provided Computer training courses on ICDL for around 2000 secondary school students in Al AIN educational area and is persisting on providing such initiatives.

Weaknesses' points:

- Pay subject to national negotiations.
- Not everyone aware of the range and availability of services provided by water and electricity.
- Constant talk of reorganization at a national/regional level affects morale.
- Some areas of the County feel they are neglected and the resources are concentrated in other areas.
- Under investment in services over decades might mean expectations are low.

Opportunities points:

- Modernization agenda provides chance to become the key player in all service delivery/partnership arrangements.
- ICT development at the heart of Economic Development Strategy for Cornwall and links to government.
- Developing new services based on virtual offices, further on-line services 24/7 availability.
- water and electricity service staff to take more of a community representational role and provision of a wider range of services.
- Opportunity to develop a wider integrated response in meeting risks through collaboration with other water and electricity services within the region.
- Abu Dhabi "capital of the United Arab Emirates", has occupied a distinguished position on the map of the world's most sophisticated cities. It is racing to achieve the highest standards of excellence in the field of business, tourism, culture and art. In addition, it is an important economic center on the international level and is listed among the ten largest oil-producing cities of the world.

Threats points:

- Potential loss of integration, currently through a county wide based provision through the County Council, if two or more unitary authorities proposed.
- Potential for loss in community focus with a move to a regional water and electricity service provision.
- Difficult to provide level of response expected and required to meet all threats without the participation and support from other water and electricity Brigade's within the region
- The land area of the Emirate of Abu Dhabi is about 67,340 square kilometers, representing 80 percent of the total area of the United Arab Emirates. The population of the Emirate of Abu Dhabi reached
- The Emirate of Abu Dhabi launched several pioneer projects in various sectors including oil, gas, electricity and water, petrochemicals, alternative energy, business and real estate sectors.

VII. CONCLUSION

There is a significant link between the Six factors (Political, Economic, Social, Technological, environmental and Legal analysis) that affecting positively on the company's activities which lead to affect positively on its service to their customers or even employees

So, the above PESTEL analysis for ADDC has highlighted six important factors that are affecting its external macro environment. By keeping these factors in mind, we have come to the conclusion that The Abu Dhabi government support the ADDC company's consumer (locals and non- locals by paying 80% of the electricity bills for locals and 50% for non-locals. On the other hands, it pays 100 % of water bills for both locals and other non-locals residents.

SWOT analysis is a framework for analyzing your strengths and weaknesses, and the opportunities and threats you face.

This will help you to focus on your strengths, minimize weaknesses, and take the greatest possible advantage of opportunities available. SWOT analysis becomes a USELESS exercise if it is not extended TOWS where the strengths are used to capitalize on opportunities and to counter threats; the weaknesses are minimized using opportunities and both weaknesses and threats are avoided

ADDC becomes a leading water and electricity distribution and supply company comparable with the top quartile performers worldwide by 2020.

Plan, develop, maintain, and operate a reliable, secure, safe, and cost effective distribution system in Abu Dhabi and deliver services that meet or exceed customers' expectations.

Achieving ADDC vision requires us to permeate a core values throughout the organization in order to enable and deliver sustainable business results. the core values include

Water, wastewater and electricity networks are capital-intensive industries, where capital costs (depreciation and return on capital) account for the majority of each company's costs. It is therefore important to ensure that the capital expenditure of these companies is undertaken efficiently. Because of this, we carry out a detailed analysis of how such capital is spent 'after the event' using the criteria below:

Capital expenditure reviews (CAPEX was required to meet growth in customer demand or relevant security and performance standards; and

The CAPEX was efficiently procured (procurement to be interpreted both in relation to the tendering process and to project management). We then appoint independent consultants at the end of each price control period to assess the efficiency of the capital expenditure in that period against these criteria. Where necessary we make appropriate adjustments to the price controls to ensure that only efficiently-incurred costs are remunerated.

REFERENCES

- [1] ADWEA Demand Manual, Pg 23, 2010.
- [2] Asafu-Adjaye, J (2000) 'The relationship between energy consumption, energy prices and economic growth: time series evidence from Asian developing countries'. *Energy Economics* 22 615-625
- [3] Ferguson, R, Wilkinson, W and Hill, R (2000) 'Electricity use and economic development' *Energy Policy* 28 923-934
- [4] Greene,WH (2000), (4th ed.), *Econometric Analysis*, Prentice Hall international Inc
- [5] Huang, J-P (1990) 'Electricity consumption and economic growth: A case study of China' *Energy Policy* 21 717-720
- [6] Pesaran, MH, Smith, RP, and Akiyama, T (1998) *Energy Demand in Asian Developing Countries* Oxford University Press, 226
- [7] Yang, H-Y (2000) 'A note on the causal relationship between energy and GDP in Taiwan' *Energy Economics* 22 309-317
- [8] Akinlo, A.E.(2009). Electricity Consumption and Economic growth in Nigeria: Evidence from Cointegration and Co-feature Analysis. *Journal of Policy Modeling* 31(5), 681-693
- [9] Ahmad N; Hayat M.F; Hamad N & Iugman M. (2012). Energy Consumption and Economic growth: Evidence from Pakistan, *Australian Journal of Business and Management Research*. Vol. 2 No. 06 (09-14)
- [10] Altmay, G, and Karagol E, (2005). Electricity Consumption and Economic Growth: Evidence for Turkey. *Energy Economics* 27(6), 859-856.
- [11] Asafu-Adjaye, J (2000). The Relationship between Energy Consumption, Energy Prices and Economic Growth: Time Series Evidence from Asian Developing Countries. *Energy Economics* 22(6) 615-625
- [12] http://en.wikipedia.org/wiki/PEST_analysis
- [13] <http://pestleanalysis.com/pest-analysis/>
- [14] <http://addc.ae/en/about.html>
- [15] <http://addc.ae/en/certs.html>
- [16] <http://addc.ae/en/hse.html>
- [17] <http://addc.ae/en/tips.html>
- [18] Distribution Magazine issued by ADDC company
- [19] All magazines can be downloaded from:
- [20] <http://addc.ae/en/pub.html>