

# “ENERGY CULTURES FRAMEWORK” IN THE TRANSPORTATION SECTOR- IMPLICATIONS FOR THE INTERNATIONAL OIL INDUSTRY

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**Abstract:** Cognitive norms, energy practices and the material culture are the determinants of the behaviors of the consumers of the energy burning appliances that lead to the formation of the energy cultures framework. This cultural based approach of energy consumption patterns reflects itself within the lifestyles of the consumers that is directly relevant to the final consumption of the energy sources. Consumption styles of energy burning appliances of the consumers within the transportation sector have reflections upon the whole cycles of the international oil industry since the main fuel type of the energy burning appliances of the transportation sector uses oil products. The uniqueness of the Middle East would acquire more importance. The reasons are fourfold: the first reason is the bigness of the reserves of the Middle East. The second reason that contributes directly to the increasing importance of the Middle East is the low level of exploration, drilling and production costs. The third reason is the geographic location of the Middle East. The fourth reason is the spare production capacity of the reserves in the region

## NAKLİYE SEKTÖRÜNDEKİ “ENERJİ KÜLTÜRÜ ÇERÇEVESİ” -ULUSLARARASI PETROL ENDÜSTRİSİ ÜZERİNDEKİ ETKİLERİ

**Özet:** Bilişsel normlar, enerji pratikleri ve materyal kültür gibi etmenler enerji kültürü çerçevesinin oluşmasını sağlayan enerji ile çalışan ürünleri kullanan tüketicilerin davranışlarını belirleyen unsurlardır. Enerji tüketim kalıpları üzerindeki kültür temelli bu yaklaşım, yansımalarını enerji kaynaklarının nihai tüketim oranları üzerinde doğrudan etkisi olan hayat tarzları üzerinde gösterir. Nakliye sektöründe kullanılan enerji tüketim araçlarının temel yakıtı petrol ürünleri olduğu için, nakliye sektöründeki tüketicilerin tüketim kalıplarının uluslararası petrol endüstrisinin tümü üzerinde yansımaları olacaktır. Orta Doğu bölgesinin nevi şahsına münhasır konumu daha da önem kazanacaktır. Bunun dört temel nedeni vardır: birincisi, Orta Doğu bölgesindeki rezervlerin büyüklüğüdür. Orta Doğu bölgesinin artan önemine doğrudan katkı yapan ikinci neden arama tarama, sondaj ve üretim maliyetlerinin düşüklüğüdür. Üçüncü neden, Orta Doğu bölgesinin coğrafi konumundan kaynaklanmaktadır. Dördüncü neden ise Orta Doğu bölgesindeki rezervlerin ek üretim kapasitesine sahip olmasından kaynaklanmaktadır

'Energy cultures framework' employs a 'cultural based approach' of energy consumption patterns. Influential factors in energy consumption patterns and the reasons, opportunities and the basic necessities of this behavioral change are reflected within the codes of energy cultures framework. Throughout the efforts of safeguarding the future of the energy sector and of the planet, it has been recognized that consumption behaviors of energy burning utilities and energy usage cultures of millions of people in the global scale are crucially important. It has been regarded that energy usage behaviors and patterns provide the basis of 'lifestyles' that are directly relevant to the final consumption of energy sources. Lifestyles that are influenced by the energy cultures determine the demand for energy products. The degree of demand is reflected within the amount of supply that forms the base for production. The place, amount, quality and quantity of production decision of supplier countries would, in turn, have some implications on the international oil industry chains as whole. Therefore, energy cultures have important contributions throughout the whole cycle of the chains of international oil industry.

Behaviors of consumers that shape the energy cultures of the users of energy burning appliances have their roots within the interactions among cognitive norms, energy practices and the material culture. The behaviors of consumers are largely determined by the available and the most widely used energy type of the time frame under consideration. Wood used to be the primary energy fuel before the industrial revolution. Wood had been replaced by coal. This energy transition from wood to coal has regarded to be one of the primary ingredients of the industrial revolution. With the initiation of the steam engine, more powerful machines have been initiated. In turn, production has increased. With the help of the new types of products that are plenty and cheap, new ways of lifestyles have gained ground throughout the societies.

The next energy transition has been observed from coal to oil. With the initiation and development of internal combustion engines, the need for oil products has increased. The advantages of oil when compared to other energy sources have provided the necessary ground for broader use of oil products. The advantages of oil to other types of energy sources are worthy of attention. Since oil is liquid, it is easy to transport oil in large amounts and quantities from production areas to consumption points. The amount of transportation costs are minimized within the total accounting calculations of the whole projects.

Another advantage of oil resulting from its liquidity is that it can fill any space when it has to be transported and stored. In addition to the liquidity of oil, high energy content that it covers is another advantage of oil when compared to other types of

energy sources. When the same amount of oil, coal and natural gas are taken into consideration, the energy content of oil is much higher than the energy contents of coal and natural gas. It is a lucrative business to make investments in oil industry because of these issues of low investment and high profit opportunities.

Moreover, the fact that it is easy to find oil products nearby is another advantage of oil when compared with other types of energy products. Since it is easy to transport and store oil, it is easy to find oil stations almost every corner while travelling from one place to another destination. Pump stations and storage tanks of oil products require some technical aspects and infrastructure costs that are lower than the technicalities and infrastructure costs of other types of energy products.

Furthermore, current appliance stock of energy burning appliances favors broader consumption of oil products. Especially in the transportation sector the use of oil products are dominant when compared to other types of energy sources. The internal combustion engines that run the motor of the transportation vehicles are making use of oil products. In order to use another type of fuel, the engine of the transportation vehicle under consideration has to be changed at first. Since, for the foreseeable future, it is impossible to eliminate the internal combustion engines of the vehicles, oil is going to continue to dominate the transportation sector. Even if it is possible to change the engines of the vehicles, it is evident that it is going to be a costly effort the consequences of which is going to be unbearable to burden.

Lastly, the inelastic demand of oil products is another issue that favors the wide usage of oil products. Whatever the price of oil is, consumers continue to buy the oil products since there is no substitute good for it. In one hand there is the fact that drivers have to pay the price of oil products whatever the price is. On the other hand there are great amounts earnings of governments with the taxation of oil products. Governments tax oil products in various stages in variable quantities with different headings which are easy to collect at the same time. Customs tax, value added tax etc. are among the types of taxes that governments are making use of. Governments collect these taxes easier than other types of taxes such as the estate tax or environment tax. Consumers pay the tax at the pump head. This is another factor that contributes heavily to the dominant use of oil especially in the transportation sector.

It is an actual fact that internal combustion engines are no longer regarded to be ‘luxury’ but a ‘basic need’ in almost all geographies. Apart from the personal use of cars, trucks are regarded to be one of the main elements of industrial

sector in transportation. If the basic necessity for human body is the blood running through the vessels, the basic necessity for the industrial sector is the trucks carrying goods from one point to another destination on the roads. With no doubt, oil consumption is and will continue to be the main parameter of the transportation sector.

In this context, behaviors of consumers contribute heavily to the demand of the products under consideration. When what is meant by behavior in the context of energy consumption throughout the energy cultures framework is regarded, there are basically three issues that have to be taken into consideration. First, energy technologies that are acquired or adopted by the consumers have to be taken for granted. Secondly, consumers' use of energy related technologies require considerable importance within the behaviors of consumers. Lastly, the aspirations of the consumers should also be evaluated when the behaviors of consumers are analyzed.

These issues are reflected directly in the calculations of final consumption. The level of technology determines the type of appliances or the vehicles that have to be used by the consumers. The preference of the consumers to use the Sport Utility Vehicles or common types of transportation vehicles are hidden within the use codes of consumers' use of energy related technologies. The aspirations of the consumers such as cleanliness and a healthier environment determine the fuel qualifications. The notion of 'boutique fuel' that is employed in some states has resulted from such kinds of considerations.

It is with no doubt that the behaviors of consumers that are constructed by the energy cultures framework contribute directly to the final choice of fuel types and the amounts of consumption which determines the supply and demand calculations in a great amount which has some paramount implications for the international oil industry as a whole.

It is evident that main oil production zones would gain greater attention within global politics. Central Asia, the North Sea, Latin America, West Africa, Russia, the Middle East would attract attention as geographical locations. OPEC and Non-OPEC producer strategies would gain more importance as political calculations among suppliers. There would be a kind of policy surrogate among producers and consumers as a whole. There would also be more emphasis on unconventional oil issues such as oil shale and tar sands. The basic reason of the relative increase in the importance of the oil related issues some of which are mentioned above is the vital importance of oil for both producer countries and consumer countries.

It is a well-known fact that oil is regarded to be crucial for industrial sector, household consumption, agriculture sector and power production. However, it is *sina qua non* for transportation sector. Therefore, oil related issues, in general, is and will continue to be dominant within the calculations of global politics for the foreseeable future.

In this context, the Middle East occupies a unique importance; therefore, it requires special treatment and attention among other geographies and issues within the international oil industry framework. The first reason of the importance of the Middle East comes from the bigness of its reserves. When three dimensional seismic surveys are taken into consideration, it has been observed that the reserves of the Middle East region in general are big reserves. Apart from the fact that the Middle East occupies almost two thirds of the global oil reserves, the geologic structure of the region has big reserves that are separate from each other. This provides an opportunity for investors to engage businesses that make use of the notion of the economies of scale in great amounts.

In addition to the bigness of the reserves, the low level of exploration, drilling and production costs is another reason that makes it a lucrative business for any kind of investors to be active in the Middle East. The price for production a barrel of oil is very low when compared with the production costs in the United States or the North Sea. Huge reserves with low production costs, the Middle East has attracted and will continue to attract global attention within the international oil industry circles.

Third reason that contributes heavily to the continuing importance of the Middle East within the international oil industry comes from its geographic location. The Middle East, for its geography, is close to the consumption points. The proximity to the markets is a big advantage when the whole cycle of exploration, production, transportation and consumption is taken for granted. Since it is close to the main consumption markets, transportation costs are considerably low within the whole projects. In addition to the earnings in monetary terms, short distances have other advantages. Short distances embody short lead times between the loading and unloading facilities. It is important to note that ‘time element’ is crucially important for the uninterrupted continuation of the flow of social life for almost every consuming country. Factories need energy to run in time. Power generators need energy to generate power in time. Cars need oil products to run in time.

Fourth reason of the importance of the Middle East arises from its spare production capacity. It should be noted that there is a certain amount of production coming from each reserve from the production facilities. The amount of pressure, quality

and quantity of the crude, location and depth etc. that shape the technical aspects determine the amount of production of each field in different stages of production. Spare production capacities of the producers indicate the increase in production without damaging the reserves under discussion. It is evident that the suppliers that can enjoy the advantages of the spare production capacities would have greater market shares within the 'great pool of international oil.' The market power that the Middle East enjoys strengthens its position within the chains of international oil industry.

It has been foregrounded that the energy cultures framework in the transportation sector has some implications for the international oil industry as a whole. This, in turn, has some reflections on the global international affairs. It has been concluded that the Middle Eastern affairs will continue to influence the international oil industry circles in great amounts rather than other oil production areas because of its advantages. It seems to be evident that unstable political atmosphere of the Middle East will continue to effect and be effected by the developments within the chains of international oil industry.

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