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Energy Justice and Sustainable Development Goals: Case of Common Gas Field Projects of Iran and Qatar

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ABSTRACT

The issue of exploiting shared resources appears to be a major controversy, that is, each country tries to exploit more out of a common field. Energy justice, as a new concept, seeks to apply the principles of justice in the production, exploitation, distribution, and use of energy. This study attempts to assess the extent to which Iran–Qatar common field is being exploited within the framework of the three tenets of energy justice. This study intends to identify energy justice in terms of having sustainable development indicators in the common gas field of Iran and Qatar. We use the concept of sustainable development goals (SDGs), especially the goals that are related to the concept of energy justice, to assess the realization of energy justice. The assessment of the tenets of distributional justice, procedural justice, and recognition justice demonstrates that energy justice is not pursued in the joint exploitation of Iran and Qatar.

1. Introduction

International Energy Agency (IEA) reported in 2014 that energy demand would grow by about 37% by 2040. In the meantime, the share of natural gas and less polluting fuels will be higher. Global natural gas production will reach 5,400 billion cubic meters in 2040. The growth is obtainable from the perspective of gas supplies according to the report. One of the sources of this energy is the common field between two or more countries. The benefit from these fields depends on the social and political conditions of the countries. Countries whose energy fields are on their common borders and have sufficient independence in their relations have put solutions to competitive exploitation on their agenda and are trying to benefit from these fields.

The largest gas field in the Persian Gulf and on the common border between Iran and Qatar is an example. This field is known as South Pars field in Iran and as North Dome field in Qatar. The two countries provide a significant part of their energy demand through this common field. The issue of exploiting shared resources between two or more countries has always been a major controversy, and each country attempts to exploit more out of these common fields. In addition to increased exploitation, pollution from industrial facilities has caused extensive environmental degradation in the area in three dimensions of air, water, and soil pollution. The continuation of this situation has also led to an outbreak of unknown and congenital diseases among infants and residents of the area. It appears that the accelerated development of gas field, regardless of infrastructure and social issues, causes vulnerable areas.

Patterns of energy systems are frequently volatile and unsustainable; however, who receives the energy? Who owns it? In what form? At what costs? Not only are the physical infrastructures of energy supply beginning to change, but such questions are also generating new

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awareness of the links between energy and social justice; it is in this context that the concept of energy justice, which directly complements and makes tangible many sustainable development goals, has emerged (Jenkins, 2016). Energy justice also seeks appropriate energy policies, energy security, and climate change. This study seeks to assess energy justice in the common gas field of Iran and Qatar within a framework of the three tenets of justice, namely distributional justice, procedural justice, and recognition justice. Energy justice conjugates justice with energy, and justice is the first virtue of social institutions; energy is a fundamental need and the driving determinant of human progress. Energy justice seeks to apply basic principles of justice as fairness to the injustice evident among people devoid of sustainable energy for living, hereinafter called the energy oppressed poor. Energy justice is an integral and inseparable dimension of the universally accepted foundational principle, or Grundnorm [2], of international law and policy: sustainable development. Sustainable development, an expression of distributive justice, is the foundational premise of international energy and environmental law (Guruswamy, 2010). Scholars have argued that sustainable energy and energy justice are overlapping concepts. After all, sustainable development is expressed by the three paradigms of economic sustainability, environmental sustainability, and social sustainability and defined as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Pellegrini-Masini et al., 2020, pp. 4).

The present study aims at identifying energy justice in terms of having sustainable development indicators in the common gas field of Iran and Qatar. We use the concept of sustainable development goals (SDGs), especially the goals that are related to the concept of energy justice, to assess the realization of energy justice. In this study, we use Goals 3, 9, 10, 12, and 13 to better understand and evaluate energy justice among the 17 goals.

In the second section, the literature on energy justice and sustainable development is reviewed. The third section introduces the method of study. Section four evaluates the tenets of energy justice in the joint exploitation of Iran and Qatar, and the final section concludes the study.

2. Energy Justice and Sustainable Development Goals

Justice has always been one of the most important concerns and one of the highest human ideals, and it is theoretically an important topic in the social and economic sciences. Justice is the creation of a special relationship between the highest humanitarian goals and the way people live, including prosperity and the enjoyment of the benefits of society such as wealth and dignity. Thinkers like Thomas Hobbes interpret justice as part of the natural law, and he construes the field of action of individuals and the actions of society. In 1951, Hobbes attributed the third natural right to justice in Leviathan's discussion of natural law. John Rawls, in his famous book entitled "A Theory of Justice", which can be considered to be Kant's thoughts, addresses the issue of justice. In Rawls' view, humans find themselves in the right way by considering two conditions: first, enjoying freedom until they harm others' freedom; second, they accept inequality to a degree that does not harm the low-income society. One critique of Rawls is the American philosopher Robert Nozick who sees justice based on natural rights. Indeed, he proposes the relation between justice and natural rights in the modern age after Hobbes. Amartya Sen in the book of Development as Freedom states that the freedom to engage in an economic exchange is a fundamental part of social life. He allows for development and justice when there is freedom of political, social, and economic participation for individuals.

Prior to the emergence of the energy justice movement in academia, there were already two broadly-based, globally-oriented justice movements in energy research literature: "climate justice" (Pettit, 2004; Schlosberg and Collins, 2014) and "environmental justice" (Lester et al., 2001; Schlosberg, 2009). The phrase "energy justice" first appeared among nongovernmental organizations (NGOs) and citizens' groups early in the 21st century, providing inspiration for a number of scholars to bring the concept into the academic orbit. Papers exploring the notion were presented at a seminar entitled "Energy Justice in a Changing Climate" at the Interdisciplinary Cluster on Energy Systems, Equity and Vulnerability (InCluESEV) conference in London in November 2011 (Galvin, 2020).

[2] The Grundnorm, a German word translated as "Basic Norm" was propounded by Hans Kelsen to mean the foundational principle that will ultimately govern a legal system. It is a premise or predicate against which all other rights and duties can be validated or falsified. Hans Kelsen, General Theory of Law & State 110–13, (Harvard University Press, 1946).

Justice in a collection of contemporary studies has continued with a study on environmental pollution; this type of justice is expressed by environmental justice (Schlosberg, 2013; Walker, 2012). The concept of environmental justice owes much of its current definition to community activists across the USA who have highlighted environmental degradation in their localities as a result of polluting industrial activities and have resisted the siting of potentially polluting facilities, including waste incinerators, in their neighborhoods since the 1970s (Davies, 2006:708). The idea of environmental justice has been a central concern for academics in a range of disciplines, and both the concept and its coverage have expanded substantially in the past two decades (Schlosberg, 2013). In contrast, energy justice, which is focused throughout this work, carries the same basic philosophy; however, it aims to provide all individuals, across all areas, with safe, affordable, and sustainable energy. The focus here is firmly on energy policy and the key theme of energy systems (McCauley et al., 2013:2).

Recently, the concept of energy justice has been introduced into the literature of environmental justice and climate justice. Notions of justice can emphasize how energy serves as a material prerequisite for many of the basic goods to which people are entitled and can stress that the externalities associated with energy systems often interfere with the enjoyment of such fundamental goods as security and welfare. Energy justice, therefore, recognizes that energy needs to be included within the list of things we prize; how we distribute the benefits and burdens of energy systems is preeminently a concern for any society that aspires to be fair (Sovacool, 2014: 15).

Energy justice is a relatively new theoretical framework for understanding the sustainability of the energy system and the allocation of burdens and benefits among all those actors that are involved in its various phases, that is, those who produce, deliver, and consume energy and those who are called to manage the corresponding waste. Energy justice questions are about how to distribute the benefits and costs of energy production and consumption, as well as attention to future generations and environmental pollution. As energy justice theories draw on the experiences of the environmental justice movement, they reproduce the well-established "three-legged" framework, which considers justice in terms of distribution, recognition, and procedural justice. This framework, systematized by Schlosberg (2009), settled a long-standing debate on the need to consider environmental sustainability alongside social justice concerns (Broto et al., 2018). Eames (2011) explored how issues of justice arise in the transition toward renewable and sustainable energy systems. He concluded that the conceptual frameworks and policy-oriented tools for researching sustainability transitions need to incorporate more explicit consideration of distributive, procedural, and epistemic justice, and added that many more established fields of energy research do so.

In this paper, we follow the three central issues or tenets of energy justice which are presented in the literature on justice for the energy policy: the distributed justice, the procedural justice, and the cognitive justice. Distributional understandings of justice in terms of the unequal distribution of impacts, the unequal distribution of responsibilities, and the spatialities are implicated in these. Justice is recognized in terms of the processes of disrespect, insult, and degradation which devalue some people and some place identities in comparison to others. Justice as participation and procedure is defined as how geography plays a role in the inclusions and exclusions of environmental decision-making (Walker, 2009: 615).

Distributional justice is the first tenet of energy justice, which distributes the environmental goods and bads with equity and fairness as common concepts. Distributive justice breaks with the gross domestic product (GDP) model because it proposes that the unequal distribution of these goods remains a fundamental issue, and not just a regrettable necessity. Utilitarianism itself tends to erase inequalities from the calculation by summing the total well-being of society, which implies that injustices, both social and environmental, are built into the system. This raises the question of how to alleviate these injustices by working within that system (Todd and Zografos, 2005: 485).

The concept of sustainable development has been well developed and accepted throughout the political system appearing in European and national-level energy strategies, and further afield. The European Commission "Energy 2020: A Strategy for Competitive, Sustainable, and Secure Energy" places sustainability at its core, yet explicit references to the ideas of justice and equity are notably absent. Nonetheless, sustainable development is embedded in the notion of equity and justice, and the desire for a sustainable energy system necessitates policy developments that have these concepts at their core. In this regard, the newly emerging energy justice agenda is both fundamental and timely (Jenkins, 2016).

The 17 sustainable development goals and 169 targets, which we are announcing today, demonstrate the

scale and ambition of this new universal agenda. They seek to build on the millennium development goals and complete what they did not achieve. They attempt to realize the human rights of all and to achieve gender equality and the empowerment of all women and girls. They are integrated and indivisible and balance the three dimensions of sustainable development: the economic dimension, the social dimension , and the environmental dimension. The goals and targets will stimulate action over the next 15 years in areas of critical importance for humanity and the planet (UNDP, 2015). Energy access, renewable energy, energy efficiency, and other energy-related issues are also contributing to the achievement of almost all the SDGs. There are several SDGs in which energy-related issues are mentioned explicitly in targets or indicators (Energypedia, 2017).

3. Method

To assess and illustrate our arguments, we study energy policy and SDGs in the common field of Iran and Qatar. The three tenets of justice are presented in Table 1.

Table 1. The evaluative and normative contributions of energy justice.

Tenets	Evaluative	Normative
Distributional	Where are the injustices?	How should we solve them?
Recognition	Who is ignored?	How should we recognize?
Procedural	Is there fair process?	Which new processes?

Source: Jenkins et al., 2016

We use SDGs to examine the three tenets of energy justice. The SDGs are a collection of 17 interlinked goals designed to be a "blueprint to achieve a better and more sustainable future for all" (Assembly, 2017). The SDGs were set in 2015 by the United Nations General Assembly and are intended to be achieved by the year 2030 (Assembly, 2015).

Table 2. Sustainable development goal indicators.

Goals
Goal 1. End poverty in all its forms everywhere;
Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture;
Goal 3. Ensure healthy lives and promote well-being for all at all ages;
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all;
Goal 5. Achieve gender equality and empower all women and girls;
Goal 6. Ensure availability and sustainable management of water and sanitation for all;
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all;
Goal 8. Promote sustained, inclusive, and sustainable economic growth; full and productive employment; and decent work for all;
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation;
Goal 10. Reduce inequality within and among countries;
Goal 11. Make cities and human settlements inclusive, safe, resilient, and sustainable;
Goal 12. Ensure sustainable consumption and production patterns;
Goal 13. Take urgent action to combat climate change and its impacts;
Goal 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development;
Goal 15. Protect, restore, and promote sustainable use of terrestrial ecosystems; sustainably manage forests; combat desertification; halt and reverse land degradation; and halt biodiversity loss;
Goal 16. Promote peaceful and inclusive societies for sustainable development; provide access to justice for all; and build effective, accountable, and inclusive institutions at all levels;
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

Source: UNDP (2016)

The distributional tenet of justice is expressed as where the injustices are. The expansion and exploitation of the common gas field have caused increased air, soil, and water pollution. In addition to affecting the health of individuals in these areas, the health of pregnant women and children is compromised. The destruction of farming and fishing; high migration; and lack of infrastructure and suitable settlement, human capital loss, etc. all represent injustice in the region. To evaluate the first tenet, we use SDGs 3 and 13. To evaluate the second (Recognition) and third (Procedural) tenets, we use SDGs 9, 10, and 12. Table 3 lists the tenets of energy justice and SDGs.

Table 3. Tenets of energy justice and SDGs.

Tenets	Goals	Targets	Indicators
Distributional	Goal 3. Ensure healthy lives and promote well-being for all at all ages	3.1 By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births	3.1.1 Maternal deaths per 100,000 live births
		3.2 By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and decrease the mortality of children under 5 years to at least as low as 25 per 1,000 live births	3.2.1 The mortality rate of children under 5 years (deaths per 1,000 live births) 3.2.2 Neonatal mortality rate (deaths per 1,000 live births)
		3.9 By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination	3.9.1 Mortality rate attributed to household and ambient air pollution 3.9.2 Mortality rate attributed to hazardous chemicals and air, water, and soil pollution and contamination
	Goal 13. Take urgent action to combat climate change and its impacts	13.2 Integrate climate change measures into national policies, strategies, and planning	13.2.1 Number of countries that have formally communicated the establishment of integrated, low-carbon, climate-resilient development strategies for the reduction of disaster risk such as a national adaptation plan process and national policies and measures to promote the transition to environmentally friendly substances and technologies
Recognition	Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization,	9.1 Develop quality, reliable, sustainable, and resilient infrastructure, including regional and trans-border infrastructure to support economic development and human well-being with a focus on affordable and equitable access for all	9.1.1 Share of the rural population who live within 2 km of an all-season road

Tenets	Goals	Targets	Indicators
	and foster innovation	9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable with increased efficiency of resource use and greater adoption of clean and environmentally sound technologies and industrial processes while all countries take action in accordance with their respective capabilities	9.4.1 CO_2 emissions per unit of the added value
Procedural	Goal 10. Reduce inequality within and among countries	10.2 By 2030, empower and promote the social, economic, and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion, economic, or other status	10.2.1 Proportion of people living below 50% of median income disaggregated by age group, and sex and persons with disabilities
		10.3 Ensure equal opportunity and reduce inequalities of outcome, including by eliminating discriminatory laws, policies, and practices; and promoting appropriate legislation, policies, and action in this regard	10.3.1 Percentage of the population reporting having personally felt discriminated against or harassed within the last 12 months on the basis of a ground of discrimination prohibited under international human rights law
	Goal 12. Ensure sustainable consumption and production patterns	12.2 By 2030, achieve the sustainable management and efficient use of natural resources	12.2.1 Material footprint and material footprint per capita

Source: UNDP (2016)

Using the indicators listed in Table 2 for the tenets of energy justice, in the next section, we will evaluate these tenets for the common field of Iran and Qatar.

4. Reviewing and Evaluating Tenets of Energy Justice in Joint Project of Iran and Qatar

To evaluate energy justice in the common area of Iran and Qatar, we use the concept outlined in Section 3 and in Tables 1 and 2.

Using the concept of distributional justice, the question of Table 1, and indicators 3.1.1, 3.2.1, 3.9.1, 3.9.2, and 13.2.1, the exploitation of the field is performed in a competitive and independent manner between Iran and Qatar. The independent exploitation of each country with a view to producing more in a competitive and nonviolent atmosphere has negative consequences for both countries. These consequences include greater utilization and lack of attention to sustainable development and resource conservation for the next generation, which increases environmental pollution in the region since it is known as one of the most polluted areas in the world. The pollution from industrial facilities in three dimensions of air, water, and soil pollution has caused the extensive degradation of the environment and the encroachment of vegetation and animals. The continuation of this condition has led to an outbreak of unknown and congenital diseases among infants and residents of the area. In addition, increasing the operation of gas fields causes a dramatic drop in reservoir pressure and a rapid decline in pressure down to the dew point, which results in the loss of valuable components of the gas in the form of droplets that are scattered and unrecoverable, thereby reducing the amount of condensate that can be recovered.

Regarding the recognition justice and the question of "who is ignored?", we use indicators 9.1.1 and 9.4.1. Environmental destruction and air pollution due to not regarding distributional justice have led to ignoring fishermen, immigrants, settlers, and farmers. Indicator 9.1.1 shows that due to the increased demand for immigration to this region and the lack of adequate infrastructure and housing, the quality of the life of

immigrants is low. In addition to having no minimum welfare, they are affected by the condition of the region. The people who migrate to this region are most educated and human capitals, and the loss of labor force and human capitals is neglected. As well, the competitive exploitation of each country independent of the common area, in addition to causing great problems, has led to high rates of abortion and cancer and has had a significant impact on indigenous people, especially mothers and infants, and on the individuals and the staff of these fields, who are elites and human capitals.

The third and final tenet is the procedural justice. In this context, SDG 10 emphasizes reducing inequality, and SDG 12 stresses consumption and production patterns. It is possible to discuss the type of production and cooperation of the two countries in this regard. Using the commonly used strategies to exploit common areas in international treaties, such as prosperity, which have legal obligations in both countries, can be followed by a framework and behavior close to justice. Competitive exploitation has entered the two countries during the time of import, and the continuation of this process is not in the interest of any of the two countries. Why do both countries compete for exploiting the common field? Qatar competes for exportation and achieving its desired goals and Iran for responding to its high domestic demand.

In its first six-year national development plan (2011–2016), Qatar predicted that it will complete the development of the common area by the end of 2015 and, through the achievement of the objectives of the program, will bring about a significant transformation in its economy. Iran's deep dependence on domestic consumption in industrial, domestic, agricultural, commercial, and transportation sectors has made a strategic value for this commodity. In a rational atmosphere, the two countries will, in terms of production standards, gain more benefits in the long term in terms of energy justice. The proper model framework in decision-making, provided that its conditions and assumptions are satisfied, will have the proper atmosphere for the realization of energy justice.

Such a decision may be in the following circumstances:

- Decisions are made in full confidence;
- The decision-maker not only has the information in its entirety, but also has the ability to use this information;
- The criteria for selection are clear, and the decision-maker has a reasonable system of preference, so it can differentiate and classify different options by arranging their values;
- The decision-maker must be able to calculate the results related to each option and compare them with other options and will have the freedom to act in the choice of the method;
- The weakness of the legal system governing the two countries in the oil and gas sector has led to the failure to meet these conditions, as well as to the neglect of energy justice by both countries;
- In order to move in the direction of energy justice, attention must be paid to the legal requirements for the benefit of the common area of Iran and Qatar;

In this regard, we first look at the status of the two countries in terms of a set of laws, regulations, and policies. The main laws of oil and gas in Iran are:

- Oil Exploration and Exploration Act throughout the country (1957);
- Oil Law (1974);
- Oil Law (1987);
- Law on the Amendments to the Oil Law of 1987 (adopted in 2011);

Table 4. Highlighting the importance of the four main oil laws in Iran relative to energy justice.

Title of the Law	Article Number	Article Description
Oil Law (1957)	9	National Iranian Oil Company is committed to maximizing its commitment to oil exploration and exploitation operations in the areas it holds.
Oil Law (1974)	26	Protecting resources and preventing environmental pollution
Oil Law (1987)	7	Full surveillance and care of the preservation of oil reserves, the conservation of natural resources and resources, and the prevention of environmental pollution.
Law on Amendments to the Oil Law of 1987, adopted in 2011	1	Produced from oil resources, preventing the loss of reserves

Source: Research findings in this work

The legal framework of the oil and gas industry in Qatar has been shaped in the following sets of laws and programs:

- Legislative Decree No. 10 of 1974 on the subject, the law establishing the State Oil Company of Qatar;
- Legislative Decree No. 4 of 1977 with regard to the protection of oil wealth;
- Decree No. 30 of 2002 on the topic, the Environmental Protection Act;
- Law No. 3 of 2007 on the issue, the exploitation of natural wealth and its resources;
- Qatar National Development Plan 2016–2011;
- Qatar vision document for 2030.

Table 5. Qatar legal requirements for energy justice.

Title of the Law	Section	Description
Legislative Decree on Protecting Oil Wealth, 1977	4	Agent, committed and responsible for preventing loss, damage to living conditions, and general health;
Qatar National Development Plan 2016–2011	First strategy	The government is committed to exploiting resources and investing wisely from oil revenues for the current and future generations;
Qatar vision document for 2030	3	Long-term conservation and maintenance of strategic oil and gas reserves to meet the needs of national security and sustainable development;

Source: Valdez et al. (2014)

It is clear that there are legal requirements for the enforcement of energy justice in both countries; nevertheless, because of the economic and political dependence of both countries, in terms of exports and resources, or due to Iran's high domestic demand, there is no possibility to enforce energy justice laws or pay little attention to it. The lack of implementation of the legal rules has led to a lack of energy justice.

5. Conclusions

In this study, the extent of the exploitation of Iran–Qatar joint area was evaluated in the framework of energy justice. For this assessment, the three tenets of energy justice were used. The challenge of energy justice is to apply the tripartite approach not only to energy policy, but also to the entire energy system. The study of the three principles of energy justice, namely distributive justice, accountability, and procedural justice, revealed that the type of beneficiaries did not take into account the common energy of Iran and Qatar and did not follow this path. In this context, energy equity is considered by the private sector, government, and the public in terms of social responsibility. Their choices will have a huge impact on global climate change, and in particular, on intergenerational justice.

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