Conserving Bahrain’s Classical Element: A take on Air Quality

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Over the last three decades, Bahrain’s government has implemented a range of laws and regulations aimed at protecting the local environment in general, with some of them concentrating on air quality through the powers vested within the Supreme Council for Environment (“**SCE**”). More recently, Bahrain has taken further measures to ensure close and targeted supervision of its climate mandate through the appointment of a Special Climate Envoy (Dr Mohammed bin Mubarak Bin Daina) in addition to promoting the status of the Sustainable Energy Centre to a government authority bearing a specific mandate and a dedicated budget.

Current air quality framework

The Supreme Council for Environment was entrusted with the execution of the duties by Law (21) of 1996 (“**Environmental Law**”). Its aim is to protect the environment from polluting sources and causes, as well as to avoid environmental degradation through the implementation of appropriate plans and policies.

Bahrain’s Economic Vision 2030 emphasized on defining goals for a just and prosperous community so that Bahraini nationals and residents can prosper in a sustainable and appealing climate. Protecting the climate, according to Vision 2030 Vision, entails enacting energy efficiency legislation, mostly for the residential sector, and steering investments into innovations that reduce carbon emissions, reduce pollution, and foster the concept of renewable energy.

In an initial attempt, Bahrain’s inaugural environmental council ensured through Ministerial Decree (1) of 1998 on Environmental Assessment Programs that ‘all projects and developments are subject to an environmental impact evaluation and shall permit or reject project proposals pursuant to such evaluation. Furthermore, Ministerial Decree (10) 1999 of Environmental Standards for Air and Water, as well as the related ministerial decrees mentioned below, assembled the national sector-specific limits on air emissions:

- Law (54) of 2014 ratifying the Unified legislation for the GCC countries’ control of substances that deplete the ozone layer.
- Ministerial Decree (10) of 1999 on Environmental Standards for Air and Water.
- Ministerial Decree (8) 2002: Standards for Pollutants and substances emitted from vehicle exhausts, and vehicle inspections.
- Ministerial Decree (10) 2006 on Air Pollution Emissions (mandating the installation of air quality detectors.)

Issues at hand

The protection of natural resources is an obligation vested upon the state under Article 11 of the Constitution. Furthermore, the Constitution attempts to consolidate the environmental element through requiring the executive branch of government to take all the required steps and arrangements to protect

the environment and conserve wildlife (as per paragraph I of Article 9).

However, the protection of the environment comes with various obstacles. Those include pollutants produced naturally as a result of living in an arid region with regular dust and sand storms (i.e. pollutants transported across borders, pollutants produced during energy production, and pollutants produced by vehicles and industrial operations.)

As a result, the first ambient air quality monitoring station was inaugurated in 1984 prior to being upgraded in 1993 and 2006, resulting in three working stations operating around the clock. Data obtained from air quality monitors revealed areas of concern. A collection of national air quality standards is currently under development in addition to reviewing new proposals to expand the number of air monitoring stations. Furthermore, there are government-led attempts to track and minimize pollution associated with motor vehicles and industries, with plans to incorporate electric vehicles by Q3 of 2021.

Government initiatives

Mandatory Environmental Impact Assessments are also undertaken for new construction projects to mitigate any environmental effects, with a mitigation plan in place for those already in place. Consequently, the SCE is currently coordinating the creation of an Air Quality Strategy in order to respond to current problems and better manage pollution at its source. Bahrain has taken several steps to contribute to global efforts in:

1. Adopting the United Nations Framework Convention on Climate Change.
2. The adoption of clean transportation projects such as Bahrain Metro.
3. Promulgating Ministerial Decree (70) of 2015 on energy efficiency card for air conditioners.
4. The development of a unique Green Building Code.
5. Vesting further powers to the Sustainable Energy Authority.

Renewable energy

The Sustainable Energy Authority prepared two key documents in order to meet the commitments outlined under the Paris Climate Accord:

1. National Renewable Energy Action Plan (NREAP)
2. National Energy Efficiency Action Plan (NEEAP)

With the chief aim of achieving the NREAP target of generating 5% of energy via renewable resources by 2025 and 10% by 2035, the government has launched various initiatives to improve air quality through the adoption of Resolution (2) of 2017 Concerning the Connections of Renewable Generators to the Distribution System of the Electricity and Water, a proposed rooftop feed-in tariff and the launch of Bahrain’s Wind Atlas in an attempt to promote wind-energy generation in Bahrain.

On the other hand, the NEEAP aims to issue a number of projects to promote the generation of renewable energy built for the purpose of reducing overall pollution levels in Bahrain. Since 2018, a number of PV panel producers set up manufacturing plants in Bahrain. On a grander scale, the Sustainable Energy Authority launched various concessions for the development of solar-energy projects. A waste-to-energy initiative. The projected waste incineration facility will treat 390,000 tons of solid wastes per annum, thereby generating up to 25MW of power channelled into the national grid.

Clean energy credits

The applicable rules of Bahrain's Net Metering Law employ the concept of "set-off by law" as stipulated in the Civil Code of Bahrain, whereby surplus electricity produced through the appropriation renewable energy resources is deducted from the owner account. This given approach adheres to general set-off conditions, namely:

1. *The correspondence of debts;*

That is to say that the parties of the relationship are both debtors and creditors to each other. Which is the case for the relationship under question as the Electricity & Water Authority ("**EWA**") is a creditor for the electricity it supplies and a debtor for the electricity it receives and vice-versa.

2. *The unanimity of the subject of the set-off;*

The subject of the set off should be the same, which is also the case for the relationship in question as both parties are supplying each other with electrical energy measured in Kilowatts.

3. *The unanimity of the source of obligation; and*

In line with the above conditions both parties' obligation arise from a contractual obligation.

4. *The maturity of the corresponding debts.*

In fulfilment of the final condition, debts will only be set off upon their maturity based on a monthly calculation.

As for the form of compensation, while not directly stated, it can be interpreted from the totality of the rules set by the Net Metering Law that EWA is under no obligation to pay an independent renewable energy producer for the surplus, rather EWA must keep the surplus Kilowatts provided as credit Kilowatts until the owner consumes such surplus credits.

Conclusion

Due to its location in a dry and harsh area vulnerable to dust storms, it is experiencing declining air quality as a result of increased dust and sand storm frequency forced globally by desertification and climate change. More notably, Bahrains economic boom has negatively impacted air quality due to increased urban development, transportation fleet growth, and industrial activities.

As such, the following short-comings were determined by the SCE in order to ameliorate air quality in Bahrain:

- There is a lack of data on pollution, as well as a small number of air quality monitoring stations.
- Inadequate air quality specialists (technical cadres).
- There are several research projects on the effects of air pollution on Bahraini residents, as well as research on cleaner development and renewable energy viability.

Many of the issues have been tackled at the national level, with many of them relating to mainstreaming environmental concerns regarding air quality into the government's national policies and initiatives. Bahrain's Vision 2030 acknowledged the value of lowering pollution and creating a healthy and sustainable future for citizens and residents. In this regard, the SCE highlighted the importance of adopting 'greener policies' through enhancing Bahrain's technology-transfer framework. The Third UNFCCC Communion Report further emphasised on the importance of adopting a new Environmental Law and upgrading

regulatory frameworks in order meet its climate mandate.