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The Urban Lab of Europe !

The AIRQON project Journal N° 2

Project led by the City of Breda, NL



AIR
QUALITY



The AIRQON project

The **AirQon** project aims at substituting diesel generators with an energy supply system based on Electric Vehicle (EV) batteries to provide off-grid energy for outdoor festivals and events. The solution is based on introducing an innovative technology (V2Box) to control bi-directional energy flow to and from EV batteries

This is supported by societal innovation: building up and managing a community of EV owners willing to fuel open-air events with clean electricity. Demand and supply will be matched through an online platform and mutually beneficial incentive schemes.

The final ambition is to ensure that around 35% of all events will be utilising V2Box technology for their off-grid energy demand preventing nearly 80,000 litres of diesel to be burnt in generators yearly in Breda. The project will induce higher awareness of clean energy sources and more conscious behaviour and it will explore how the technology and its business model could be applied in other contexts (generators for hospitals, public buildings, etc.).

Partnership:

- Municipality of Breda
- SBPF
- iHomer
- Faraday Keys
- ZAP Concepts
- Kairos Events
- Breda Barst
- Buurauto
- Nissan Breda
- IRAS

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1. EXECUTIVE SUMMARY

This second year of the project has been influenced by the effects of COVID-19, as any other activity performed anywhere in the world. There are serious evidences of correlations among pollutants, air quality and health levels impacted by COVID-19, hence the support for sustainable energy solutions like AIRQON is more than promising. In fact, the AIRQON solution has evolved to power events and sectors of any size, duration and volume of demand.

AIRQON is facing a short future conditioned by getting back to normality. Meanwhile, the activity in the project was redirected to other sectors as well, such as restaurants or construction works, while the acceptance and popularity of the solution is growing up in and outside Breda.

Building up a community of both event organizers and participants is essential in a crowd-based solution like this. The communication and dissemination activities carried out are supported by the growing presence of electric cars in the Netherlands, the increasing use of shared electric vehicles and the promising development of discharging technologies.

Upscaling AIRQON is inherent to the project itself, despite of being adapted to the existing conditions worldwide. Leadership of the project by Breda Municipality is especially relevant, and an additional effort is being made to keep reaching the community and involving potential participants with the aim of maintaining the desired level of activity in spite of COVID-19.

2. CURRENT STATUS

2.1 Present situation of the addressed challenge

The second year of AIRQON has been developed in circumstances severely impacted by the emergence of SARS-CoV-2 coronavirus and the disease it causes, globally known as *COVID-19*. This global pandemic has interfered with this project, mainly caused by the limitations experienced in the organization of events, both indoor or outdoor, not only in Breda or the Netherlands, but also in Europe and, ultimately, throughout the whole world.

Recently, the World Bank warned that the pandemic will cause the largest economic crisis in our recent history, estimating that the global gross domestic product (GDP) will shrink by around 5% in 2020. This means a decrease of more than double that experienced in the 2008 financial crisis. Furthermore, the most affected countries are expected to be those with a larger service sector in their economies. This is the situation of the Netherlands and its neighboring countries like France, Germany or Great Britain or other western leading economies, where services represent more than two thirds of their GDP. The Netherlands, according to Statistics Netherlands (CBS), went from a 0.4% GDP growth rate Q4 2019, to contractions of a 1.5% in Q1 2020 and 8.5% in Q2 2020.

Moreover, the event organization sector has suffered, and still does, severe economic losses. Summer without festivals or fairs, sport competitions cancelled... have resulted in millions in losses. The direct and indirect economic impact is dramatic. In a worst-case scenario, according to Pollstar, the concert industry could lose almost 9

billion dollars, globally, if coronavirus quarantines do not lift by the end of the year. And, what is more worrying, that figure does not include other associated activities such as transportation, production, marketing and security.

Among the measures for prevention of COVID-19, teleworking has been one of those that has increased the most. According to data from the International Energy Agency (IEA) and the International Labour Organization, before the pandemic, an 8% of the global workforce was working exclusively or mainly from home – in the case of the Netherlands, a 14% – but based on different analysis, around 20% of global jobs could potentially be done from home – 45% in the wealthiest European countries.

Nonetheless, lockdowns and home-offices affected net energy demand. IEA pointed that, despite the fact that overall electricity consumption decreased a 20% during the pandemic, utilities reported an arousal on weekday residential consumption patterns – 20% to 30% in the United States or 15% in the United Kingdom, to name some examples, but having in mind that regional and seasonal differences are significant. Furthermore, net energy demand may increase in households whose members normally commuted by public transport, or decrease in those that did it by car. Can this lead to a lasting change in the behavior of citizens, beyond quarantines or lockdowns? In Spain, according to BP statistics, fuel demand fell by 80% in the worst of the pandemic, and currently remains 15% below. But the most surprising fact

is that this oil company estimates that it will never again recover the demand levels reached in 2019, and much less those of 2008 before the previous financial crisis. According to IEA,

lockdowns resulted in a fall of 50% to 75% in road traffic around the world, or a drop in rush-hour congestion of 65% to 95% in major cities, as seen in Figure 1.

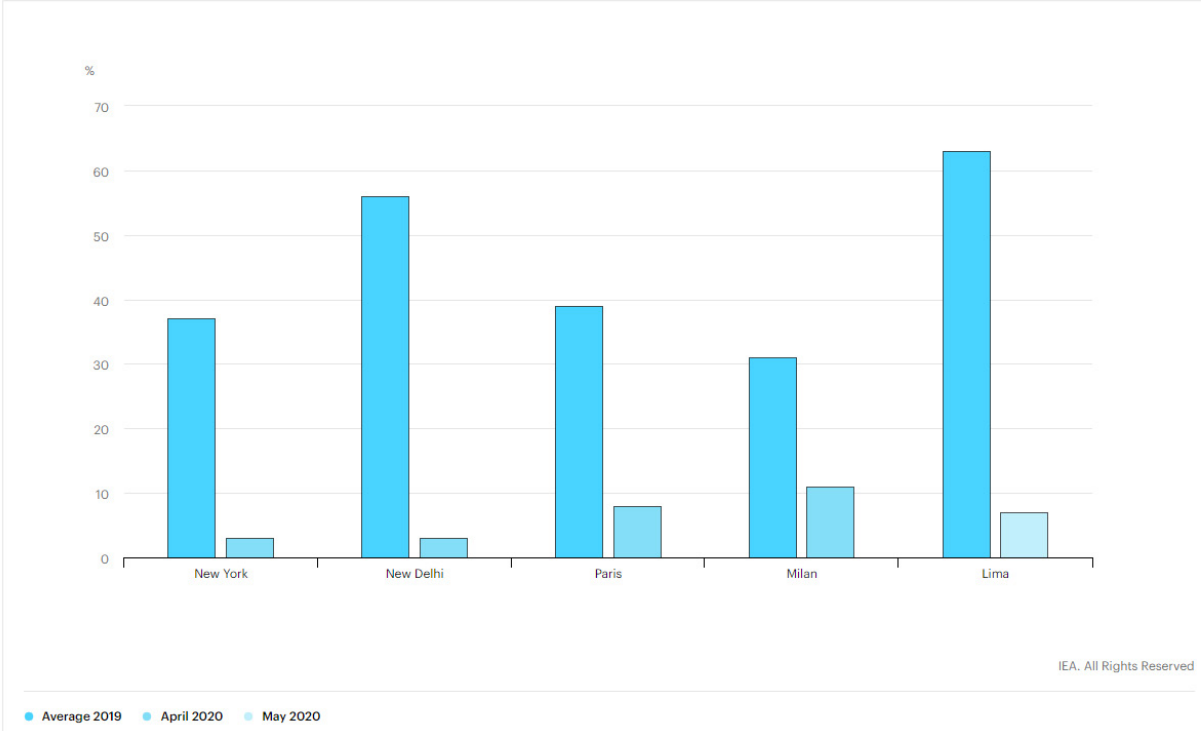


Figure 1. Average rush-hour traffic congestion in selected cities in 2019 and during lockdowns. (Source: <https://www.iea.org/data-and-statistics/charts/average-rush-hour-traffic-congestion-in-selected-cities-in-2019-and-during-lockdowns>)

In Figure 2, traffic reduction in Breda is evidenced; data are generated from a network of 15 permanent measuring points along the city, from March to August 2020. While week 10 presented a normal traffic intensity, COVID-19 pandemic impact derived in a severe drop in weeks 10 to 14, almost reaching a 40% decrease.

After that, a steady growth resulted in recovering normal traffic levels at summer, which are a 5% lower than the baseline. However, from week 40 until now, traffic levels are experiencing a new reduction as a consequence of the new anti-pandemic measures enforced by the Dutch Government.

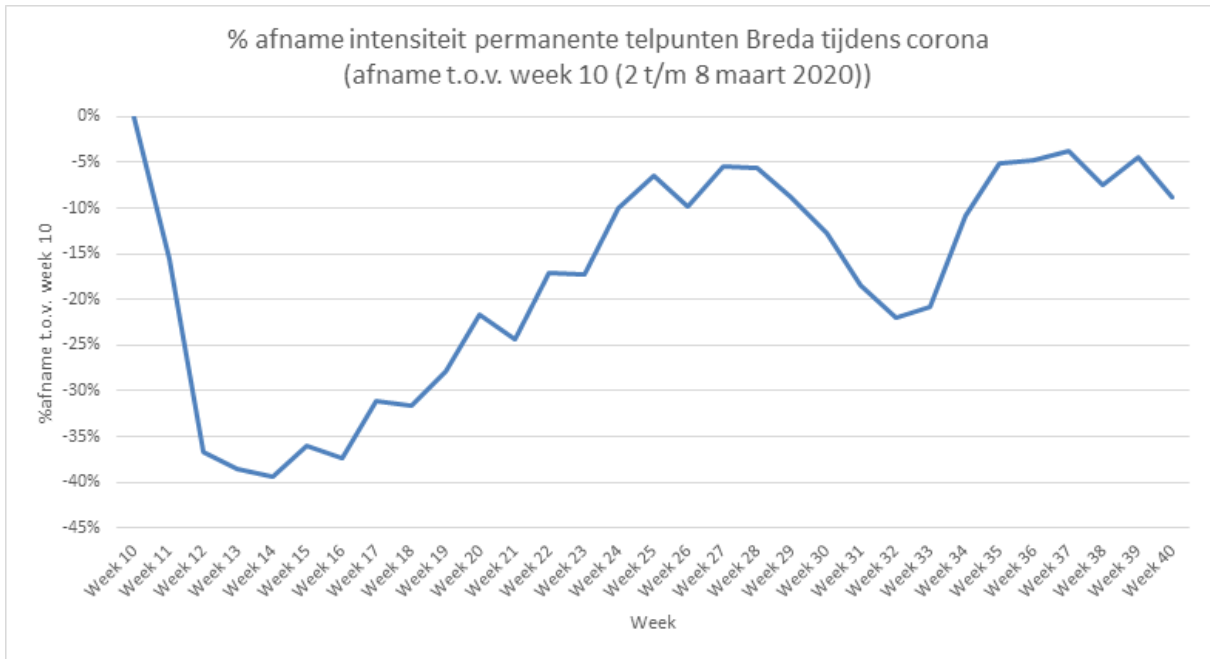


Figure 2. Evolution in traffic intensity in the city of Breda (Source: Breda Municipality)

The impact of lockdown measures during the first wave in the Netherlands can be seen in Figure 3, retrieved from the European Data Portal, that displays the relation among traffic and emissions before and after the measures announced by the Dutch government. The figure evidences that

restrictive measures heavily affected the traffic jam intensity. As it was presented in AIRQON Journal #1, it must be noted that road traffic and farms were the main sources of NOx emissions affecting the city of Breda.

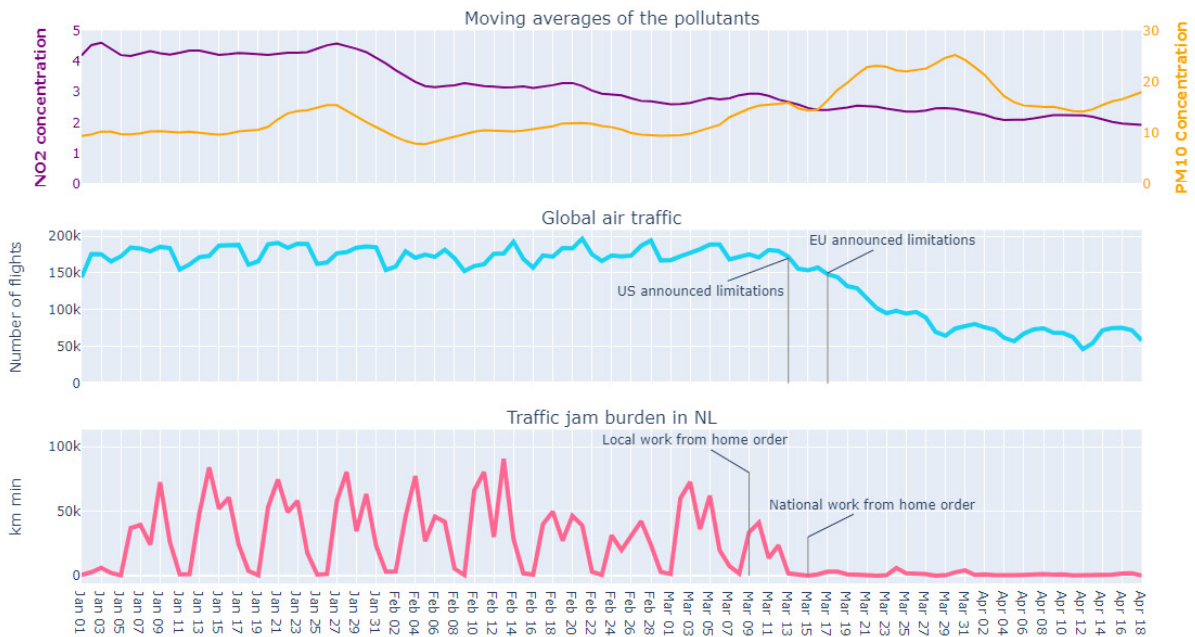


Chart 1 able to be visited online on the following URL:

https://european-data-portal_interactive.gitlab.io/covid-19/AirpollutionVisual.html



Figure 3. Traffic jam burden in the Netherlands from the last three years, showing the effect of restrictive measures (Source: <https://www.europeandataportal.eu/es/impact-studies/covid-19/covid-19-related-traffic-reduction-and-decreased-air-pollution-europe>)

The fall in key sectors of modern economies, such as industry or transportation, globally translated into a decrease in atmospheric emissions, with the consequent improvement in the air quality that the population breathes. *Nature* published that the Air Quality Index (AQI) in locked-down Chinese cities improved in almost 20 points, while in other cities without formal lockdowns – but with other types of counter-virus measures – it improved in more than 6 points. In addition to this, the effects of lockdown are larger in colder, richer and more industrialized cities. Despite those improvements, numerous pollutants remained much higher than recommended by the World Health Organization. Hence, much further effort is needed.

In Spain, as published in *Science of The Total Environment*, NO₂ concentrations in Barcelona and Madrid, under COVID-19 lockdown during March 2020, decreased 50% and 38%, respectively. This generalized drop in NO_x concentrations in Europe and China has been evidenced by the European Space Agency (ESA) and mapped via satellite coinciding with the strict quarantine measures. However, ESA states that large variabilities have been observed in northern European countries like

the Netherlands or the United Kingdom, due to changing weather conditions. Other relevant areas in the world experienced the same conditions; in Asia, for example, NO₂ concentrations reduced around a 66% during lockdown in New Delhi according to the IEA.

The truth is that COVID-19 has brought another important consequence: opening an interesting debate on the level of health care in countries, not only in terms of capacity to deal with this emergency, but also about its quality and the resources available to serve the public. This reflection, in a sense, has been generated about the quality of life of the society in which we live, transcending the simple direct effects of COVID-19.

There is a clear link between air pollution and health risk factors, increasing the severity of main chronic diseases, for example. In this way, COVID-19 pandemic experiences this relation in terms of rates of deaths and hospitalizations, as shown in Figure 4. *Environmental and Resource Economics* publishes correlations based on data from 355 municipalities in the Netherlands. For example, having other variables equal, a municipality with

1 $\mu\text{g}/\text{m}^3$ more PM2.5 concentrations will have 9.4 more COVID-19 cases, 3.0 more hospital admissions, and 2.3 more deaths.

Consequently, in recent months it has been easily appreciated a much better air quality, especially in cities, in addition to less noise, the perception of more breathable air, more availability of urban

spaces or better weather conditions. In this context, there is a convergence with the objectives of AIRQON, a project designed with a strong commitment to urban sustainability, respect for the environment and improvement of the life quality in cities. So, the question here is, did a pandemic have to come to make us realize how we would like to live in cities?

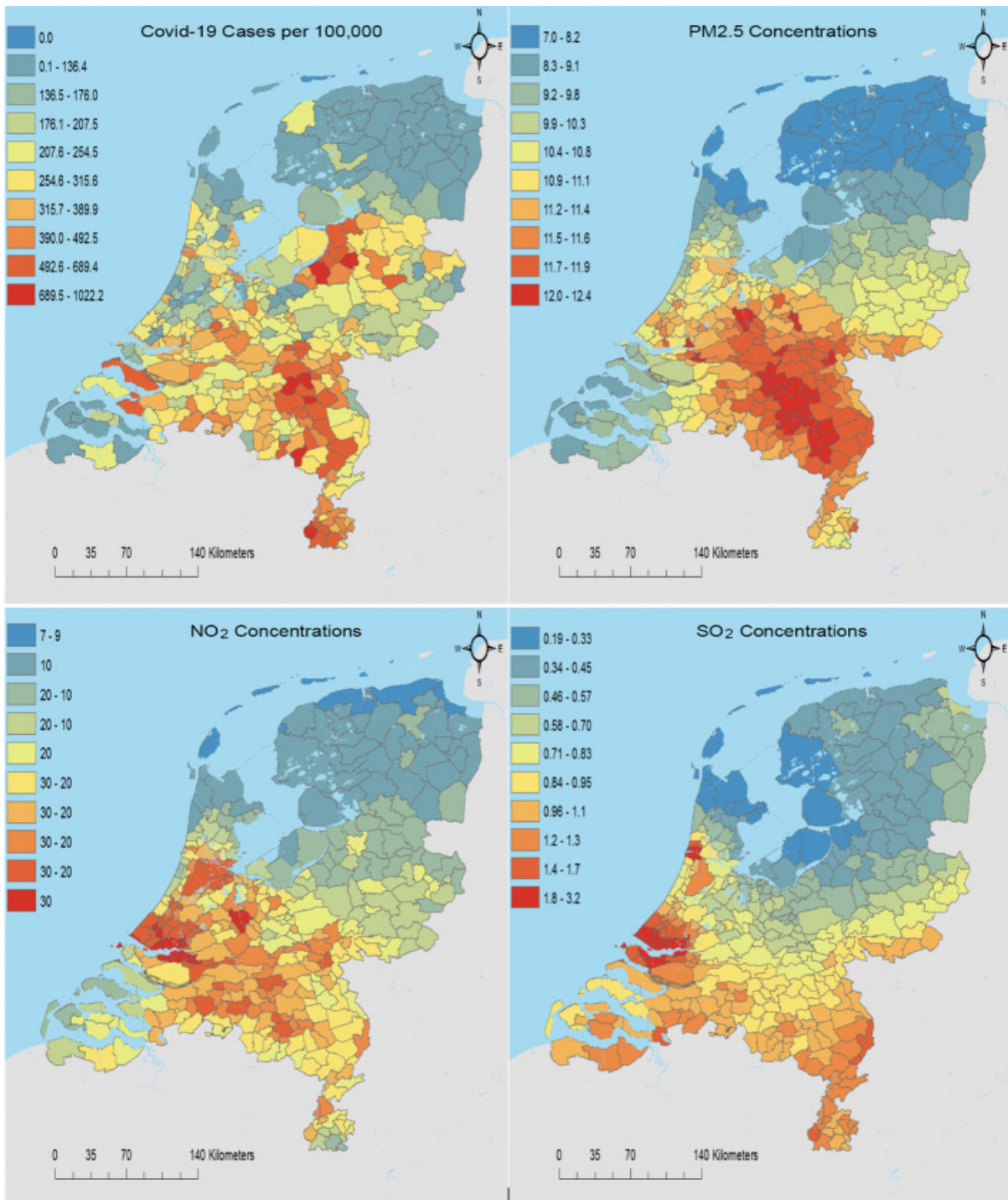


Figure 4. Covid-19 cases per 100,000 people up to the 5th of June, 2020, and annual concentrations of PM2.5, NO₂ and SO₂ averaged over the period 2015–2019. (Source: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7399597/>)

2.2 Prospective

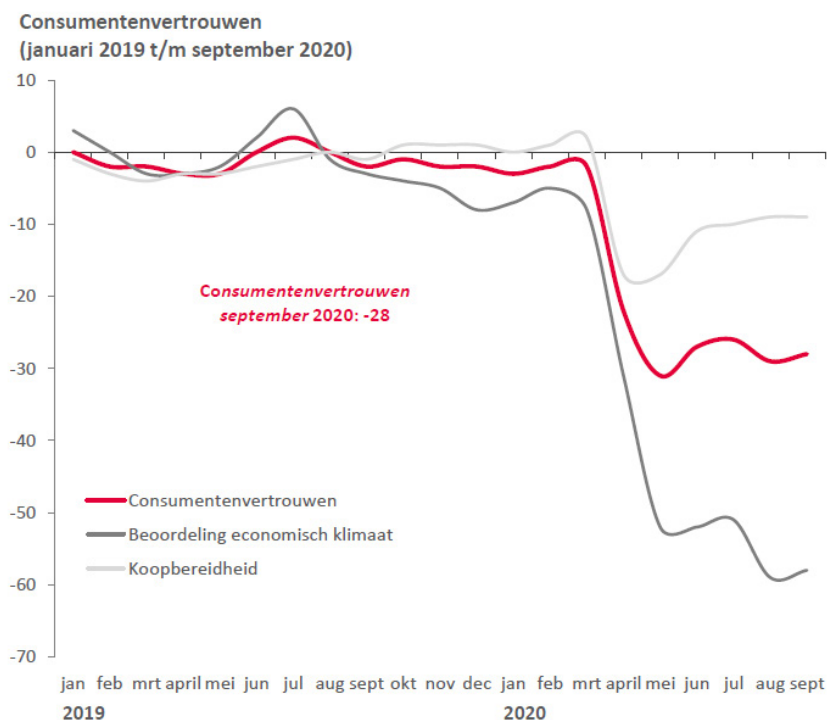
COVID-19 has not only brought the normal restrictions of a health emergency, during and after the first wave of the pandemic, but also a loss of confidence. Consequently, this threatens investments, and household expenses, with the obvious implications on employment, economic activity or growth of modern economies.

Breda Municipality created a specific web portal (<https://corona.breda.nl/onderzoeken>) to gather all the data related to the impact of COVID-19. Some relevant figures show the present situation and imminent prospective in the city: unemployment grew up to 4.6% in August 2020 – as compared to the rate of August 2019, that was of 3.6% – and 7,500 jobs were lost in the last 12 months. In addition to this, consumer confidence suffered a severe drop, in parallel with the perception of the economical context and the willingness to buy, as displayed in Figure 5.

In October 2020, the Netherlands had already overtaken Spain, France and the United Kingdom in accumulated infections, and is very close to surpassing Belgium, then being only behind Czech Republic. Nevertheless, Figure 6 shows the confidence of entrepreneurs, which are recovering fast after the first shock of the virus and heading back to normality.

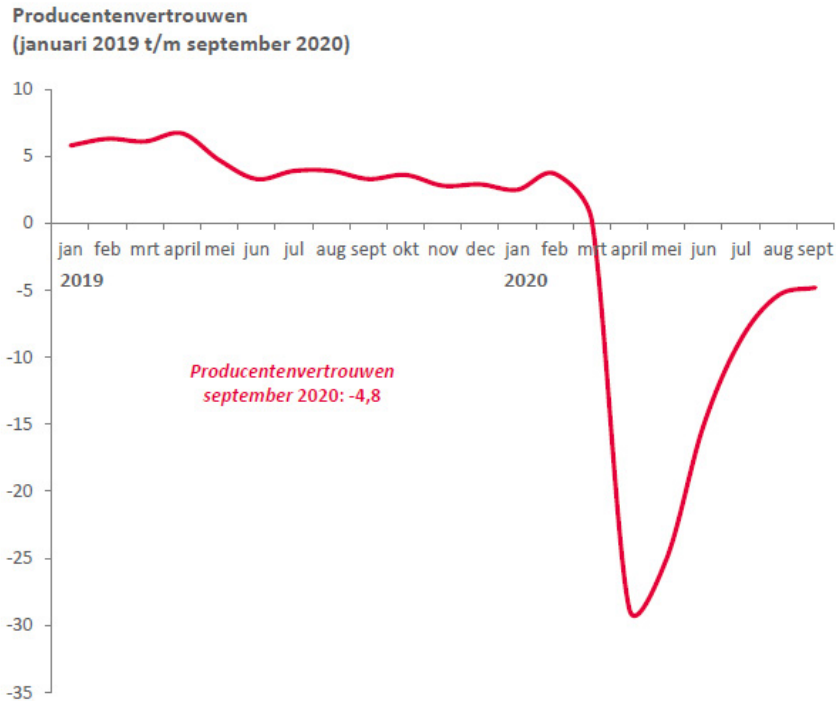
In the context of AIRQON, recovering confidence levels is essential. In a country like the Netherlands, electric cars represent around 7% of the market sales in normal conditions. Now, new car sales fell 25% in 2Q 2020, according to CBS, but committed actors like MyWheels – the industrial group which Buurauto belongs to – still bet hard doubling their car sharing fleet this year.

AIRQON is dealing as well with a growing weight on leasing plans for private cars, moving towards a 40% of that market and reaching a 70% in the



Bron: CBS (22 september 2020)

Figure 5. Customer confidence (in red color), perception of the economical context (dark grey) and willingness to buy (light grey) in the city of Breda, September 2020 (Source: <https://corona.breda.nl/file/1534/download>)



Bron: CBS (28 september 2020)

Figure 6. Confidence of the entrepreneurs in the city of Breda, September 2020
(Source: <https://corona.breda.nl/file/1534/download>)

case of electric private owners. On the one hand, this may bring an interesting opportunity for the sector, since this encourages the switch to electromobility by reducing the sense of risk for the owner. But, on the other hand, vehicle to grid or vehicle to home technology, which is the main technical pillar of AIRQON, is not mature enough, so both cars and (dis)charging device manufacturers have to make important progress on this to make it something similar to a standard solution.

It is also important to highlight that integrating electric mobility in the energy system will be one of the key factors to support the energy transition in Europe, because car batteries can play as manageable assets to achieve it, like a spread, decentralized power plant with huge total capacity. The electric car is not only for driving, it can also be used for a lot of emerging applications and this is the added value the consortium and its stakeholders perceive.

In the next year, the big test for Breda and the Southern part of the Netherlands is carnival. This is

a big event with days full of parties, so many cities – not Breda yet – already cancelled the carnival big events for 2021. Unfortunately, it is unlikely to be a normal year for events, but at the same time, these challenging conditions bring interesting opportunities for AIRQON. In fact, event organizers have to be more creative and to reshape the impact and the size of events, and there AIRQON is a powerful solution.

At present, it is estimated that it will be possible to come to 80 events with AIRQON. Expected events to be powered are now smaller, with less public and with a shorter duration. And even sometimes already planned events are cancelled at the last moment as a consequence of COVID-19 uncertain scenario. This leads to focus on the Netherlands, having the difficulties to go abroad to attend events. Obviously, for the project it could be much easier without any COVID-19 impact, but there are still events suitable to deliver clean power from electric cars. The AIRQON consortium is optimistic and remains sure that it will be a success.

3. EVENTS AND MORE

3.1 A portfolio of energy solutions

AIRQON is cohabiting with other energy solutions of any nature, either on-grid or off-grid. Consequently, it may be useful for any size of event, combined with other energy sources like diesel or renewable generators, energy storage in batteries, etc. to meet any kind of power requirements. This complementarity with the conventional portfolio brings AIRQON interesting possibilities to become a solution suitable to be included within the portfolio for sustainable, efficient and green events.

A traditional inefficient approach to power events would assume the total maximum power demanded as the only reference for energy planning. Moreover, diesel generators, which are the most spread energy sources to power events, have even more environmental impact when the

operating regime is far from their nominal ratings. And these adverse conditions normally last longer than the main days of the event because of the set up and set down operations before and after the event.

It cannot be omitted that economy plays an essential role on energy planning in events. A proper analysis, apart from being more sustainable, may bring cost saving to the organizers due to a proper consumption of fuel or equipment sizing, to name just a few instances. At the same time, there is a positive image projected for those entities using efficient energy solutions, as in the case of zero plastic or recycled products. The trend is moving towards offering power as a service, with tailored solutions, and AIRQON fits perfectly in this paradigm.



Figure 7. AIRQON powering Greenery restaurant, Amsterdam (Source: Breda Municipality)

AIRQON therefore works like another power source. That means that events neither depend on it, nor are limited to it, but of course AIRQON can absolutely help them to be more efficient and to drastically reduce polluting emissions and their impact in the environment. And AIRQON, therefore, is not limited to temporary applications, but it is fully compatible with any energy demand from a house or a business, to cite some examples.

3.2 Engaging users

Having a community supporting AIRQON is essential. In fact, no matter how powerful the technical solution is if there aren't any participants to make it work. This is the essence of the AIRQON project. The power comes from participants, so the focus has to be put on the public. Nevertheless, this innovative energy solution has to face the inherent challenges of disruption. Charging-discharging functionalities need to be available for the car user, no matter if they are the owner or a temporary user, as in car sharing services. Hence, once again, normalization and manufacturers' support are a must to make it widespread. AIRQON is contributing to make this process normal by disseminating its smartness and simplicity and, at the end, to engage users. The plan may seem simple: go to an event, have a good time, and AIRQON will give you a compensation.

Festival goers in a music festival like Ploegendienst Winterfestival had the chance to win a free ride by electric taxi to the event with their friends, in addition to a free VIP pass to the festival backstage. Or, in case they had an electric car, like a Nissan Leaf, they could win to be picked up and brought back home by an AIRQON driver, so the car was parked in the backstage and used to power the event while the winners enjoyed the

Furthermore, AIRQON is now concentrating on the building sector. In the Netherlands there is a big demand for sustainable houses, not only regarding the building but also the whole construction process. And there AIRQON is able to power on-site energy demands such as mobile offices or even pop-up repair works. This can be therefore a promising sector where to work together, considering as well that demand of houses and their prices remain high.

festival. Besides, shared-car services provide a means of transport for the users, who at the same time can use the electric cars in an AIRQON application and benefit from that.

In fact, the so-called *festival goers* are potentially promising market segment. Their dynamic character, in addition to their age (mainly +25 years old) and status (mostly university students or graduates) make them potential buyers of electric cars in the coming years, so, of course, this is a strong point considered from the companies' side. Moreover, there is a parallel engagement with these festival goers, reinforcing their participation in the event itself and encouraging them to keep in contact and share information.

All this empowers the possibilities of electromobility. Another incipient trend of the car is the fact it can become a pay mode. Nissan allows electric car drivers to pay parking services by discharging their batteries in the Yokohama Nissan Pavilion, which is powered by a hybrid system that integrates solar photovoltaic generation and the power delivered by Nissan Leaf batteries. So the question will be: are you going to pay in cash, with your cell phone or with your car?



Figure 8.1 and 8.2. AIRQON presence in Zandvoort Circuit and Greenhopper Tour (Source: <https://www.facebook.com/airqon.eu>)

Meanwhile, AIRQON delivers energy in the Greenhopper project, where electric cars are used for powering a mobile information office. This energy-neutral sustainable house rides through Breda informing the citizens about ways to become greener, and of course demonstrating that an electric car is a valid energy solution to power a house independently from the grid, maximizing the use of renewable generation. Another experience where AIRQON takes part has taken place in Zandvoort racing circuit, home of the Dutch F1 Grand Prix, hosting electric car

driving tests and disseminating the AIRQON solution in public.

In addition to this, AIRQON is proactively searching for new ways of reaching potential users. To do so, Skoon.world is a marketplace designed for accelerating the energy transition by creating a network of clean mobile energy solutions able to connect both offer and demand. The key point is that Skoon provides renewable energy already stored in batteries for rent, specifically oriented to provide a clean and financially competitive alternative to diesel power.

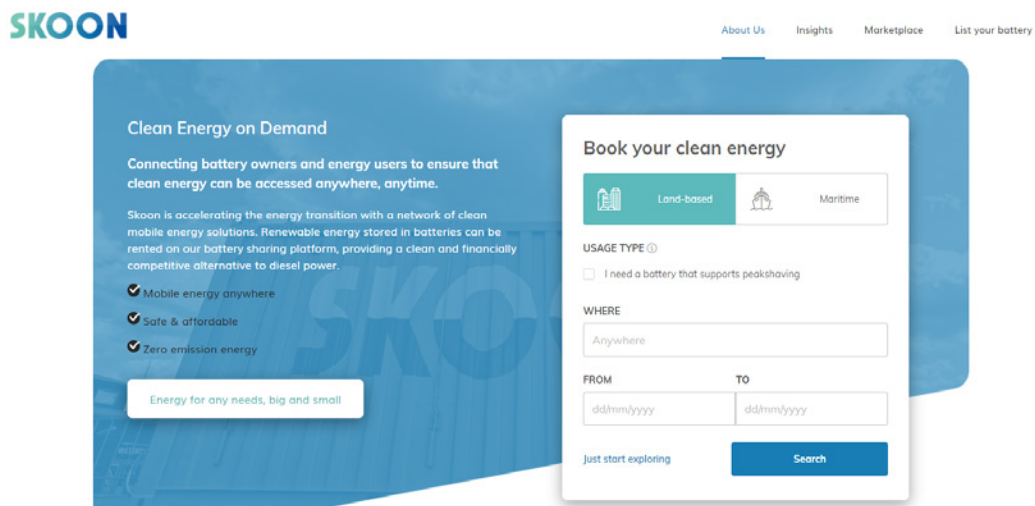


Figure 9. Search for your energy storage solution (Source: <https://skoon.world/>)

In this battery sharing service, AIRQON offers its capabilities by means of an eNV200 electric van equipped with an embarked bidirectional charger and a rack of batteries. This interesting,

promising platform puts AIRQON at the same level as other more conventional energy storage solutions like battery containers or modular packs.

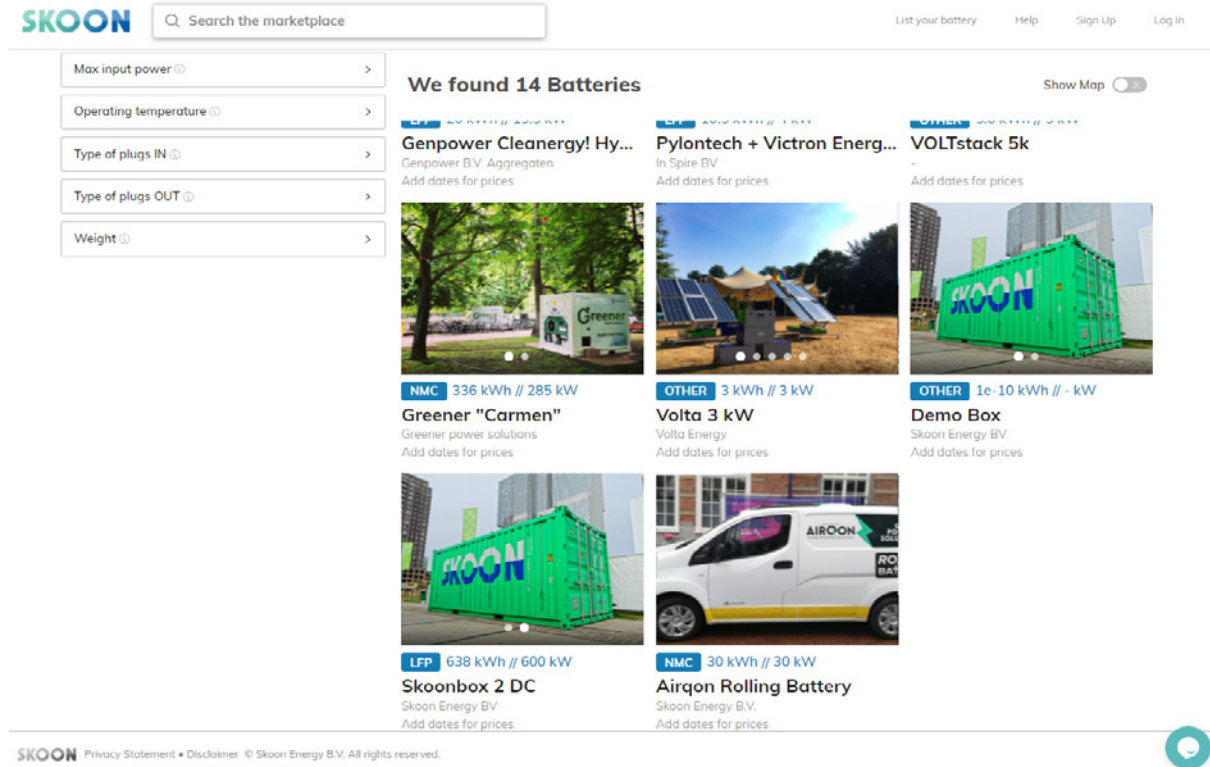


Figure 10. AIRQON rolling battery, a solution in Skoon portfolio (Source: <https://cloud.skoon.world/explore?application=Land-based>)

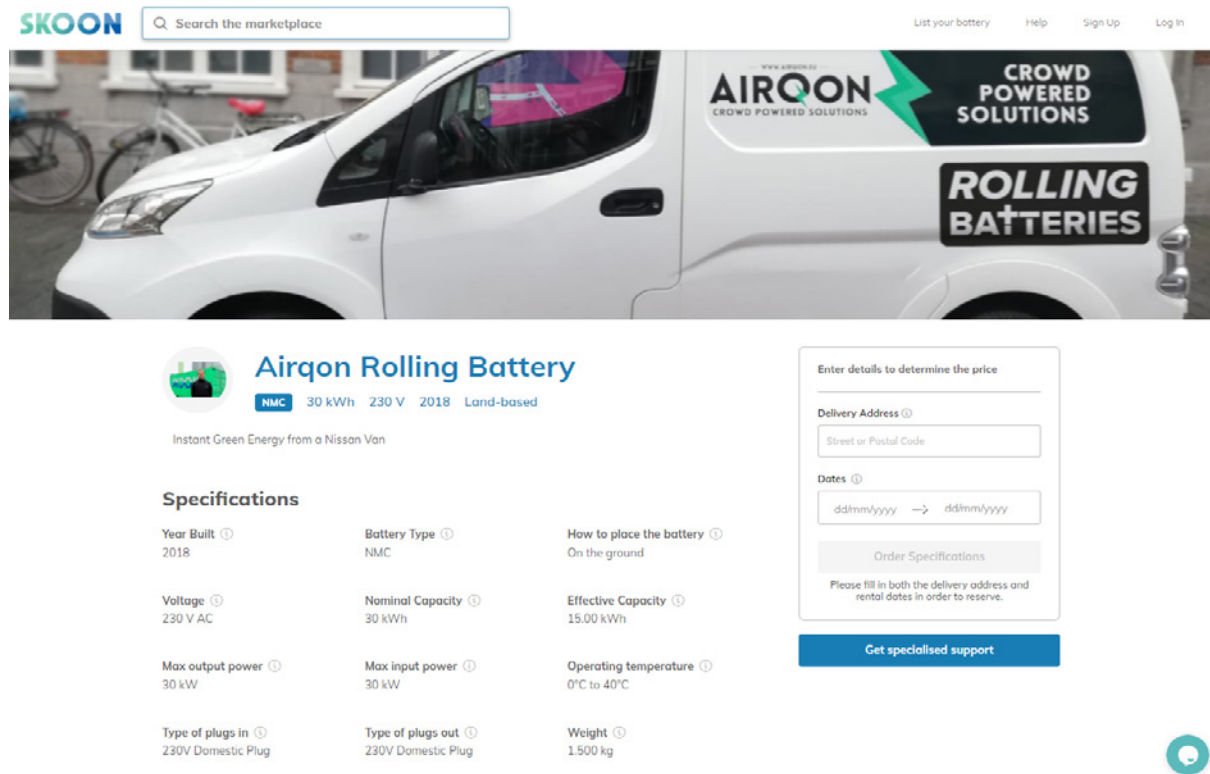


Figure 11: Technical specifications of the AIRQON solution (Source: <https://cloud.skoon.world/battery/Airqon-Rolling-Battery-geneID=GLZizU8BvDawgxFOGBQa?application=Land-based>)

4. UIA IMPLEMENTATION CHALLENGES

4.1 General overview

The table below displays an overview of the UIA challenges and how they are translated for the AIRQON project, indicating by means of a traffic-light color code the level of risk against each one,

according to this second journal released and the status of the project. Changes in the levels in comparison with Journal #1 are indicated in brackets.

Table 1: Mapping AIRQON against UIA implementation challenges

Challenge	Level	Comments
1. Leadership	Medium	Given the uncertainty of the present context where AIRQON is being developed, leadership of the project by Breda Municipality remains especially relevant.
2. Public procurement	Low	Events organized by third parties. Limited number of possible providers for solutions like AIRQON.
3. Cross-department working	Medium (↓)	Events want to be more sustainable. AIRQON is becoming more popular. Events are smaller due to COVID-19 impact, and other kind of events and activities are being included.
4. Participative approach	Medium	AIRQON needed to be reoriented and include other sectors, apart from events. This required to search and include other new stakeholders once the project is ongoing.
5. Monitoring and evaluation	High (↑)	A lower number of events and a reduction in external pollutants make harder to identify how effectively AIRQON impacts on air quality.
6. Communication	High	An additional effort is being made to reach the community and involve participants in order to maintain a proper level of activity in these times of COVID-19.
7. Upscaling	Medium (↑)	This strength of AIRQON needed to be reoriented due to the modifications in the number and kind of events to be powered.

4.2 Detailed analysis

In this section, further details are presented for every UIA challenge addressed in the AIRQON project:

✓ Leadership (Risk level: Medium)

Given the uncertainty of the present context where AIRQON is being developed, leadership of the project by Breda Municipality is especially relevant.

The leadership of Breda in AIRQON remains strong. The partners and Breda Municipality are in close collaboration with each other and work hard to get things done despite the obstacles that sometime the present context implies.

Not only a different kind of events are finally attended this year (in size, duration, or number of attendees, for example), but also other sectors and energy demands are being reached to be powered with the AIRQON solution.

In addition to this, there is a permanent search for synergies with other innovation initiatives related to sustainability and environment, maximizing the dissemination of the project.

✓ Public procurement (Risk level: Low)

The impact of this challenge remains low in AIRQON. Events are organized by third parties. Limited number of possible providers for solutions like AIRQON, and limited demand.

To become a mainstream option, standardization of bidirectional charge is a must: devices, use procedures, protocols, etc. This generalization, therefore, will help significantly to spread this

energy model. In addition to this, the role of Breda Municipality is to encourage the adoption of this kind of sustainable solution.

Nevertheless, promising changes are observed, with more car brands thinking to enable the energy delivery from the batteries and electric car gaining popularity in the Netherlands.

✓ Cross-department working (Risk level: Medium)

Necessary coordination with Breda Municipality Events Coordination team. Not to threat event organizers. Positive image projection for the city and events as well.

The consolidation of effective coordination mechanisms remains ongoing in Breda Municipality, based on a strong, fluid interdepartmental work. As the project goes on, its popularity grows up, easing the dissemination efforts and reaching more potential users of the solution. Especially, event organizers are day by day more committed to sustainability in any form, so the suitability of AIRQON to power their demands is evident.

Nevertheless, COVID-19 impacted severely the size of the events powered, which are smaller than initially planned, but a broader variety of them are being included in the project. Moreover, other sectors, such as construction, are taking part in the project, so the variety of demands remains challenging. At the same time, this UIA project continues linking other existing and complementary actions being carried out in the city of Breda. These are the cases of the Greenhopper or the Green Quays projects.

✓ Participative approach (Risk level: Medium)

AIRQON needed to be reoriented and include other sectors, apart from events. This required to search and include other new stakeholders once the project is ongoing.

The perception in the consortium is that the idea of AIRQON is gaining acceptance in the public, and that is a fundamental factor for the success of the project. This reinforces the efforts being made to reach other sectors, involving other kind of participants than initially thought of.

At the end, there is a challenge of building up an energy community, able to power energy demands, boosting electromobility and enabling a sustainable solution that takes care of air quality. Therefore, this reorientation may be perceived as an opportunity, and the project has taken advantage of it undoubtedly.

There is a clear involvement not only of event organizers, as expected, but also of companies from other sectors. In fact, there are more events and activities to be powered, therefore making business cases more acceptable and more profitable.

✓ Monitoring and evaluation (Risk level: High)

A lower number of events and a reduction in external pollutants make harder to identify how effectively AIRQON impacts air quality.

Measuring air quality indicators is an important activity in the project in order to properly evaluate the impact of the solution developed. Nevertheless, air quality is hard to be precisely determined due to the multiple factors influencing it. In addition to this, the pandemic implied a reduction in industrial activity, traffic

levels, and of course the number of events, bringing an additional difficulty to quantify the impact of the AIRQON solution itself.

Consequently, the number of events and their size and duration must be carefully considered. The global impact may result modified, but the relative positive contribution of AIRQON when it is used for powering events will be significant, as expected. At present, Utrecht University is analyzing and measuring the impact of generators under normal operation conditions, to be later done in event contexts.

✓ Communication (Risk level: High)

An additional effort is being made to reach the community and involve participants in order to maintain a proper level of activity in these times of COVID-19.

The number and size of events are decreasing. This might imply a consequent risk of reducing the size of the potential community to validate the AIRQON solution. However, AIRQON is building a strong community of participants. Of course, the present COVID-19 circumstances make this challenging, but the fact is that engagement is growing up, even outside the city of Breda.

AIRQON needed to be flexible and work hard to reach a different kind of public, or, in other words, a wider range of participant profiles. A big event may gather thousands of people, while smaller events are focused on a narrower public, in the same way that the power demanded is different in a concert or a small pop-up event. Anyway, communication and engagement continue being the key of this project, hence the risk of this challenge is high, due to its importance in the success of AIRQON.

✓ Upscaling (Risk level: medium)

This strength of AIRQON needed to be reoriented due to the modifications in the number and kind of events to be powered.

AIRQON will power a total of 80 events, some of them smaller than initially defined. In addition to this, the presence outside the Netherlands is reduced due to COVID-19 circumstances. Nonetheless, the AIRQON solution is being perfectly fitted to other sectors such as restaurants or construction sites. In addition to this, AIRQON is present at web portals designed for renting storage solutions on demand, hence there is a strong commitment with scalability and adaptability in the validation and implementation stages of this project.

Therefore, the risk when facing this challenge has been increased due to external circumstances, not because of internal deviations related to the project itself.

5. LESSONS LEARNED

The most relevant lessons learned in this year of the project can be summed up as follows:

- The impact of COVID-19 is evident in air quality parameters, traffic levels, entertainment sector... All this had (and still has) strong implications with the scope of the AIRQON project.
- There is an increase in complexity to measure the impact of AIRQON in air quality due to the changes in the number and size of events and in other closely related factors: urban traffic levels, industrial activity, etc.
- There is a clear aim in events to be more sustainable and this helps AIRQON significantly to gain popularity and being more accepted.
- The AIRQON solution can be adapted to different sizes of events, and also to other activities or sectors, such as construction.
- Electric car discharging technologies are not mature enough to say that it is a widespread solution, despite of their strong potential to support energy transition in Europe

6. CONCLUSIONS AND NEXT STEPS

AIRQON has completed the second year of the project facing a changing global context. The uncertainty given by COVID-19 has been firmly responded by the project consortium, since the flexibility of both the technical solution and the group of people supporting it made possible to be adapted to a broader set of energy demands to be powered.

The AIRQON solution is evolving towards other final users different from massive events, their organizers and their thousands of festival goers. This let power restaurants or construction sites, to cite some examples, with the same compliance. By the way, acceptance of AIRQON keeps growing up, having that sustainability is a matter that concerns us all.

The first wave of COVID-19 pandemic arose a global movement of awareness about the way of life in modern societies. The importance

of sustainability in the daily routine is taking relevance, given the variation in the level of traffic, the growing importance of working from home, the improvement in air quality indicators, etc., despite being caused by a worldwide emergency.

In fact, several studies evidence the direct correlation of the impact of the pandemic and other relevant factors, such as levels of pollutants or environmental indicators, leading to reinforce the support for sustainable, green solutions, like AIRQON, that firmly contribute, in the end, to a better quality of life of citizens. In addition to this, companies are also aware about these necessities, as the essential part of the community that they are, in the same way they support for zero plastic strategies, recycling, etc. to effectively make possible an energy transition. Under these conditions, a crowd-powered energy solution like AIRQON is able to meet the requirements!

Urban Innovative Actions (UIA) is an Initiative of the European Union that provides urban areas throughout Europe with resources to test new and unproven solutions to address urban challenges. Based on article 8 of ERDF, the Initiative has a total ERDF budget of EUR 372 million for 2014-2020.

UIA projects will produce a wealth of knowledge stemming from the implementation of the innovative solutions for sustainable urban development that are of interest for city practitioners and stakeholders across the EU. This journal is a paper written by a UIA Expert that captures and disseminates the lessons learnt from the project implementation and the good practices identified. The journals will be structured around the main challenges of implementation identified and faced at local level by UIA projects. They will be published on a regular basis on the UIA website.



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