

# climate control MIDDLE EAST

KEY PERSPECTIVES ON THE REGION'S HVACR INDUSTRY

March 2022

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**SHARED SAVINGS ENERGY PERFORMANCE CONTRACTING**  
Henrique Pereira  
taqa solutions

**PROPERTY BUYERS AND HVAC EQUIPMENT**  
Dharmesh Sawant, Hisense

**HEALTHY BUILDINGS AND IAQ PREPAREDNESS**  
Dr Iyad Al-Attar,  
independent air filtration consultant

**ERP IN ACCELERATING DECARBONISATION**  
Housseem Jemili & Uwe Schmid, Bain & Company

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# 'ONE FOR

# THE BOOKS'

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PERSPECTIVES



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# The World IEQ Forum: Important beyond measure

**A**t the outset, this is not a promotion of the upcoming 6th edition of the World IEQ Forum; instead, it is an earnest attempt at highlighting the critical nature of the expected discussions and how their outcome can prove crucial in our battle against the spread of airborne diseases.

When viewed in the context of COVID-19, any recommendations relating to design of buildings and HVAC installation strategies may be seen as too late an intervention – though some might argue otherwise – but there is much we can gain out of applying them in the buildings that have not even been conceived. To quote Ayman Eltalouny, who represents UNEP OzonAction and who spoke in the context of building-related emissions, “Half of the buildings standing in 2060 have not yet been built. There are 3.6 billion cooling units in use today. By 2050, that number is expected to be 9.5 billion. If left unchecked, emissions from cooling appliances are expected to double by 2030.” In much the same way, we have the opportunity of applying key Indoor Air Quality (IAQ)-related outcomes of the conference in “half the buildings standing in 2060” that have not yet been built.

There is a heightened sense of anticipation of a rich harvest of insights and recommendations from the Forum, scheduled to take place on March 16 at the Sweden Pavilion at the World Expo in Dubai. The lineup of speakers and panellists is such that we can look forward to making substantial progress in establishing energy-efficient healthy buildings and communities through listening to them.

What exactly is the composition of the lineup? Well, it comprises policy makers, regulation and standards bodies, doctors, architects, building industry consultants and contractors, sectoral end-users, and manufacturers and suppliers of HVAC equipment. They are people deeply immersed in building performance and tackling the challenges using multiple skills and the richness of their experience.

In 2020, at the height of the hysteria over the pandemic, some of them came together for a webinar CPI Industry conducted on IAQ, and it was heartening to see the manner in which they complemented each other and set the tempo for discussions. The Forum on March 16 comprises a broader group of experts, and it can only be richer in content.

We are onto something big here with the Forum. We must believe in its importance, in its magnitude. Out of that belief will come a deep sense of conviction that every thought that is spread and received will help prevent the spread of airborne diseases in the buildings standing in .

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KEY PERSPECTIVES ON THE REGION'S HVACR INDUSTRY

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### EMPANELLED COLUMNISTS

**Dr Iyad Al-Attar**  
*Independent air filtration consultant, writes on specific science and technology issues relating to Indoor Air Quality, including airborne particles*



**Khalil Issa**  
*Executive Director – AHRI MENA, writes on regulation-related issues impacting multiple stakeholders in the building construction industry*



**Dan Mizesko**  
*Managing Partner/President, US Chiller Services International, writes on issues relating to chilled water systems, including operation & maintenance*



**Euan Lloyd**  
*Senior Counsel, Construction & Infrastructure, Al Tamimi, writes on legal aspects of the building construction industry, including contractual obligations and payments*



**Krishnan Unni Madathil**  
*Auditor, Bin Khadim Radha & Co., carrying out an analysis of the market, writes on business opportunities for HVACR companies*



**Alissa Paillé**  
*Founder, careersbay.com, writes on career opportunities, including typical KPIs by HR teams, in the HVACR industry*



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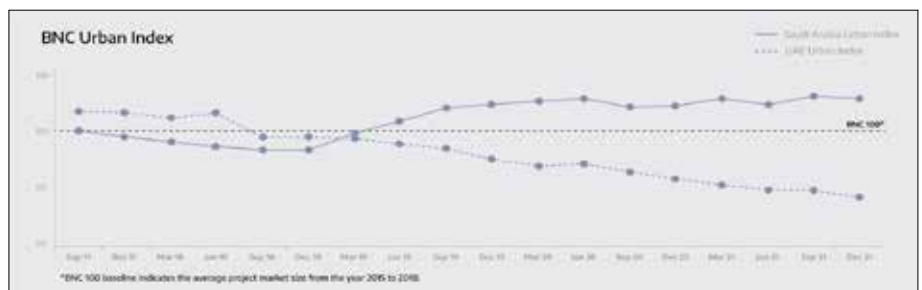
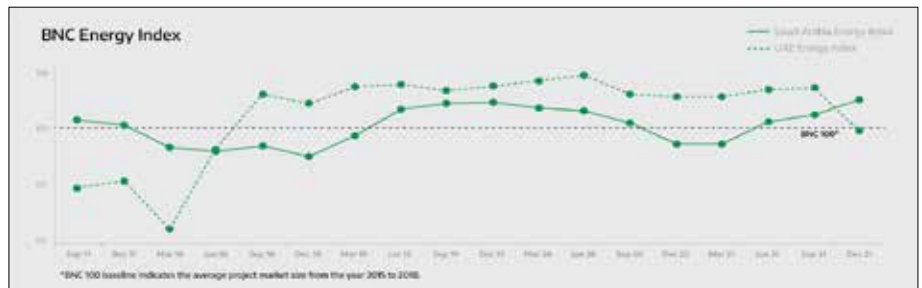
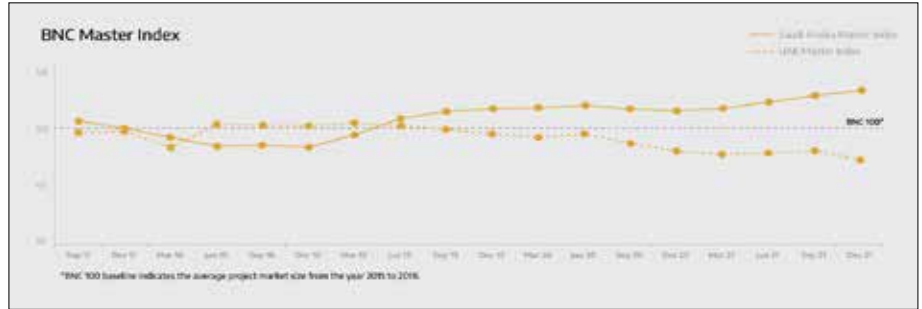
Avin Gidwani, Chief Executive, BNC Network, elaborates on three themes that will dominate 2022 in terms of business opportunities for HVACR companies in the GCC region

**I**n a world dominated by headlines of possible wars and a global pandemic that's turning endemic, there are many issues that can sway business in the year ahead. After much consideration, I selected three that I felt would be the most relevant to the HVACR industry in the region, and here are my thoughts on them:

**All's green in love and war**

How are honeybees in Oman related to orders for HVACR equipment in a new mega-development in Saudi Arabia? As you may have guessed, the answer is "global decarbonisation", and it's the love of the earth that will trigger the next business battle.

The UAE and Saudi Arabia have set definite net-zero-energy deadlines and are now working in earnest towards this global goal. Even though the UAE and Saudi Arabia have high per capita pollution rates, considering their relatively small populations, the overall significance of the pledges by these energy leaders, when it comes to the total direct impact to the global



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net-zero-energy goal is small. The significance lies in their shared ambition to be energy leaders in the future green energy world. To shed the black mantle of oil and replace it with one that is green is a multi-decade evolutionary course that will drive development across almost every sector and industry in the region.

The lowest-hanging fruits in terms of high visibility and high-impact initiatives are the electrification of transportation through the implementation of inter-country and cross-country rail lines and the development of infrastructure for EVs and hydrogen-powered vehicles. The next is the continued aggressive building of renewable energy plants at all scales, followed by the decarbonisation of the oil & gas sector through initiatives like CCUS (carbon capture, utilisation and storage).

While the transport and energy sectors will offer a number of HVACR-related opportunities, it is the decarbonisation of urban development that poses the greatest opportunity for HVACR, but it also comes with the highest complexity. Social consciousness aside, the complexity stems from:

- A lack of awareness or belief by owners in the Op-Ex benefits of energy-saving products
- A lack of standards to evaluate, test and benchmark energy efficiency of products
- A lack of regulations that incentivise green products and energy saving

To invent an adage, 'from complexity stems opportunity'. Greenifying your products, and manufacturing and supply chain processes is a given. The battle will lie in developing the standards, educating the market and proving the benefits.

### Chips and ships

A critical element of going green is better monitoring and control of HVAC systems that fall under the broad purview of the Internet of Things (IoT). Unfortunately, semi-conductor chips, which constitute a key component for almost all equipment these days, are

in short-supply due to an exponential increase in demand, poor planning and globally centralised manufacturing. With mammoths like smartphone, telecom and automobile manufacturers in line, the HVAC industry isn't on the priority list, and manufacturing delays can be expected to last through the year and possibly well into 2023.

Equipment delays can significantly affect project schedules and have a knock-on effect on non-chip products, which will not be needed unless key system components are available.

Then we have the ships. In a world used to products magically appearing

me up, Scotty", from the popular science-fiction television series, *Star Trek* that is often tersely mouthed to get the crew out of a tight spot that comes to mind when describing the current business sentiment with regard to Saudi Arabia.

Pandemic and wars notwithstanding, with the completion of over five years since the announcement of Saudi Vision 2030 and massive volumes of behind-the-scenes design and planning work commissioned and completed, it's time to start seeing execution of these plans with a rapid growth in contract awards in the Kingdom over the course of 2022.



**For the HVAC industry, in particular, pre-emptively investing in Saudi Arabia has been a large leap of faith with an offering that is procured far downstream from the early work that takes place on projects. While some have done the early work with consultants, many are still waiting for the boom to begin**

in stores and on supermarket shelves, the current fragility of the global supply chain lies exposed for everyone to see. With a pandemic that has caused supply-demand pandemonium there are now too many ships at some ports and none at others. There are truckers struggling for work in some places, and others who are shunning the ever-growing backlog of work to fight for their causes. Hence, chips aside, raw materials of various natures, including rudimentary materials that one would typically have taken for granted can be in short supply, directly affecting project execution and local manufacturing.

To quote a common adage, 'necessity is the mother of invention', and 2022 will pose the need for creative proactive solutions to supply chain problems.

### "Beam me up, Saudi!"

It can be argued that the famous line, "I'll have what she's having", from the movie, *When Harry met Sally*, aptly describes Saudi Arabia's vision goals, which seem to mimic Dubai's wild urban and tourist development success. However, it's the line, "Beam

Businesses have made tentative moves towards establishing a base in the Kingdom, but many have been dissuaded by the lack of observable on-site activity and lack of faith that the plans will see the light of day. For the HVAC industry, in particular, pre-emptively investing in Saudi Arabia has been a large leap of faith with an offering that is procured far downstream from the early work that takes place on projects. While some have done the early work with consultants, many are still waiting for the boom to begin.

With urban activity across the region relatively subdued, all eyes are on Saudi Arabia to turn on its impulse drive and respond to the "Beam me up, Saudi" call out from across the construction industry.

To conclude, here is a simple but powerful adage attributed to the US Military that sums up the advice for acting upon this last theme. To be successful in Saudi Arabia, you need to just 'Hurry up and and wait'. [ccme](#)

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# REGULATION ROUND-UP

AHRI writes a bi-monthly column on regulation-related issues in the GCC region, exclusively for *Climate Control Middle East*

## A NEED FOR MEANINGFUL MEPS

**Khalil Issa, Executive Director – AHRI MENA, speaks on the key components of successful energy efficiency programmes**

**E**NERGY efficiency regulators the world over continuously work to develop meaningful minimum energy performance standards (MEPS) for their countries. This is particularly relevant to the HVACR industry in the GCC region, where air conditioning systems consume nearly 70% of energy in the built-environment.

GCC region regulators and HVACR manufacturers alike face challenging goals set by the various countries and emirates in the MENA region. From Dubai's Integrated Energy Strategy 2030 to its Clean Energy Strategy 2050, and from the Kingdom of Saudi Arabia's Circular Carbon Economy Program (CCEP), under its Vision 2030, to Bahrain's National Energy Efficiency Action Plan (NEEAP), under its Vision 2030, most MENA countries intend to reduce greenhouse gas emissions and improve demand-side management. These initiatives fall in line with their Intended Nationally Determined Contributions (INDCs), under COP21 – United Nations Framework Convention on Climate Change (UNFCCC) Treaty, signed by over 197 participating countries. All the more reason for good collaboration amongst all stakeholders for a successful implementation of energy efficiency programmes. This is paramount to ensure these goals are achieved in an open and competitive market while transitioning safely to new refrigerants. This guarantees that only highly energy efficient HVACR equipment that meet or exceed MEPS enter the market and are recognised as doing so by consumers.

Collaboration between regulators and the HVACR industry can ensure targets are met. This collaboration can also consider past GCC region experience, assessing what worked and what needs changing, and what successful energy efficiency

strategies have regulators and the industry in Europe or North America implemented since the early 1990s.

### KEY COMPONENTS FOR SUCCESSFUL COLLABORATION

Global experience shows that successful HVACR MEPS programmes typically have three key related components: 1) Reference to proven testing and rating energy performance standards, 2) Use of rigorous certification testing programmes and processes, and 3) Compliance verification for market surveillance.

#### Key Component 1: Reference to proven testing and rating standards

To meet the countries' desired energy savings, GCC region regulators are establishing their respective MEPS, and they reference proven international standards, such as AHRI and ISO standards. In their energy efficiency regulations, using proven international testing and rating standards that establish rating criteria and procedures to accurately determine the energy efficiency of industry equipment is the foundation of a robust and accurate energy efficiency programme.

#### Key Component 2: Use of rigorous certification testing programmes and processes

The second cornerstone of a successful energy efficiency programme is the adoption of a globally recognised, industry-respected certification programme to verify equipment energy efficiency ratings. This includes stringent qualifying performance and operational testing requirements with randomly selected test samples; conducting annual tests for verifying performance claims in qualified, accredited and approved



Khalil Issa

laboratories and testing facilities; establishing protocols for failures in meeting performance claims; and challenging stated performances.

#### Key Component 3: Compliance verification for market surveillance

In addition to referring to recognised standards (Component 1), and relying on solid certification programmes (Component 2), the process of achieving these energy efficiency goals can further be assured when stakeholders, in the forms of regulators, consumers, consultants, contractors and manufacturers, can validate/verify performance through easy access to compliance data. A meaningful market surveillance programme must rely on a digital platform that offers stakeholders accurate, instant, documented and objective evaluation of the claimed energy efficiency and facilitates the delivery of required compliance data from the manufacturer to the regulatory body.

In future articles, I will address the above components as well as other topics in more detail, as they relate to the GCC region and the MENA region at large. [cccme](https://www.cccme.org)

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# AS EXPECTED...

We had it coming and could have mitigated the spread of COVID-19 with better building preparedness, says **Dr Iyad Al-Attar**, independent air filtration consultant

- 1) The paradox is that we desire enhanced Indoor Air Quality (IAQ), but there is no infrastructure to support it.
- 2) Better IAQ never gained the political traction needed to be a national priority.
- 3) We had low intent in controlling escalating emissions.
- 4) Filtration standards have been, and are, poorly understood and rarely followed, yet they are in continuous demand.
- 5) Chronic filter failures, and the addiction to washable filters, have contributed to the deterioration of IAQ.
- 6) For decades, we thought we had all the answers related to air quality. Today, the pandemic has forced us to ask different questions.
- 7) Despite enormous prosperity and technical advancement, the embers of the pandemic continue to burn.
- 8) Integrated air quality solutions are frustrated by the complex structure and speed at which we are now having to make decisions at all governmental levels – municipal, provincial, territorial, federal.

Several questions hover in the mind with a persistence that is unsettling. Since when has “our humanity”, empowered by science and technology, taken so long to defeat a virus? Is COVID-19 the narrative of how we are interacting with our environment and designing our so-called “smart buildings”? Was the pandemic the litmus test to following deficient HVAC, filtration and building standards?

I recall visiting an air-handling unit in a shopping mall, some years ago. The scenery was familiar: Collapsed air filters, primary filters washed to the point of destruction... and a pigeon’s feather trapped in the cooling coil (Figure 1). I wondered that if a pigeon’s feather is found on a cooling coil, what would stop microorganisms from invading the



Figure 1: Dust-cake formation buildup on a cooling coil (top-right: Pigeon’s feather trapped on cooling coil)



Figure 2: Common filter failures in air-handling units (media rupture, disintegration, deformation, fracture)

HVAC system and using it as a vehicle to transport themselves in the indoor environment? Clearly, microorganisms will always find an entry point in an exposed HVAC system, particularly those that have leaks and chronic filter failures, as shown in Figure 2.

In the past few decades, changes to our IAQ tactics were painfully slow, advances in HVAC technologies were on the slim side, air filtration was rather ignored; it is no surprise, then, that we find ourselves into the second year of battling COVID-19 – without complete success.

Enhancing IAQ is virtually impossible in the midst of exposed HVAC systems, leaky ducts and deficient/failing air filters. While filtration standards are always in demand, they are poorly understood, rarely followed and never applied assiduously. Using the same filter selections for all sorts of contaminant types, concentration and size distribution suggests that that we do not have an appropriate filtration plan in place. To find the light at the seemingly never-ending Corona tunnel we find ourselves in, we need to get users, engineers and consultants to share objectives and responsibilities by employing all available maintenance measures and filtration technologies to attain the best IAQ possible.

But it is not only filtration. The air quality issues we are confronted with are clearly a manifestation of our environmental behaviour, the way we choose to condition the air, and the manner in which we ventilate and filter the air. Let’s face it, environmentally speaking, we are running amuck, considering the increased concentration of particulate matter and gaseous contaminants emitted annually. Frankly, it is questionable whether or not existing filtration techniques alone are capable of accommodating such enormous increases in pollutant concentrations without addressing emission reduction.

In order to gain an intrinsic understanding of our status quo, we need to get out of the complacency mode we have been living in. For years, we have been singing the same songs about energy and sustainability and focusing mainly on obtaining indoor thermal comfort regardless of the air quality entertained as a result. Saving energy was, and possibly still is, the focal point of the decision-making process. However, it overshadowed other critical issues in our priorities. Simply put, if air quality requires extra spending, we should do it. However, that would require smart buildings, aerodynamic filter design and responsive HVAC systems that accommodate the variation in IAQ. For years, we have addressed energy

single-handedly and asked the same questions about how to enhance IAQ. Such an approach did not take us far, and the dream of making significant advancements in IAQ disappeared into thin air as conventional washable filters, and the mindset that endorsed them, remained the driving force of filter acquisition.

Until today, washable filters were the champions of any filtration selection and the favourite toys of many maintenance managers. The addiction to washing and reusing filters has compromised any filtration upgrade plans and contributed to the deterioration of IAQ. Ideally, the optimum start to appropriately selecting air filters for a specific application is to characterise the contaminant types we are trying to capture, what their concentrations are, as well as their particle size distribution. Ultimately, we come to realise the uniqueness of each application as soon as we admit they are all different and their HVAC systems operate under different climate conditions. Filtration is more than just pleating a flat media to increase the surface area of a filter, and it is not the only measure to enhance its efficiency. Efficient air filters need to be thought of as an integrated segment of the HVAC systems and the IAQ equation, not as a retrofit.

The efforts of reshuffling our priorities or working with what we have are yesterday's tricks, and the pandemic has proven loud and clear that they constitute a wrong approach. What is required is recognising, establishing and redefining our real priorities. This is particularly important, as the efforts that were exerted in terms of reducing air pollution levels, enhancing IAQ and employing responsive HVAC systems to act simultaneously were modest at best, not to mention the non-existence of IAQ infrastructure and efficient filtration.

### PULLING THE PLUG

We can no longer pull the socio-economic plug every time there is a hike in COVID cases. There have to be concrete measures to confront the current and future pandemics. Seeking lockdown as a safety measure to avoid the virus is not just the first idea we have had, but it seems to be our only idea to confront the hike in COVID cases. The truth of the matter is that we cannot run away and hide. The fact that the narrative of 'flight and refuge' is so dominantly being played out is a

**“ Filtration is more than just pleating a flat media to increase the surface area of a filter, and it is not the only measure to enhance its efficiency. Efficient air filters need to be thought of as an integrated segment of the HVAC systems**

damning testimony that we neither have the tools nor the conditions to confront the virus. While air filtration technologies can contribute to better IAQ, it is critical to realise that they do not constitute a standalone solution. Further, we need to revisit our conventional HVAC systems and outdated filtration selections, which were sought to protect us in the past decades but which have clearly failed to do so during the pandemic. The paradox that defines the status quo of our air quality is that we desire to enhance our IAQ, but there is no infrastructure to work with in terms of filters, sensors and adaptive HVAC systems capable of responding to the IAQ changes.

Then comes the debate of whether or not the virus is airborne and whether or not it is indeed possible for it to be transported by HVAC ducting systems, amongst others. We have spent far more time trying to convince others of our answers to such questions and arguing over different perspectives than we are not acting in a preventative manner and assuming worst-case scenarios.

It is possible to act. It is possible to generate favourable results. It is high time we, for instance, dipped into the enormous pool of potential that renewable energy technologies represent. It is high time we adopted smart HVAC systems, air quality sensors, particulate and gaseous filtration, and aerosol monitoring, which represent the low-hanging fruit in the orchard of remedies to the poor IAQ challenges and enormous anthropogenic pollution.

### THE EXPECTED FATE

The pandemic was the expected fate we had to face after decades of complacency

and a clear manifestation of the way we have been polluting our environment through the horrendous ways we generate and use energy. Along with the global imperatives of climate change, the economic pressures of oil price hikes and resource depletion, global attention needs to be refocused on energy use, generation and environmental stewardship. Issues such as urban and indoor quality were not even on the priority list just a short time ago. Integrated air quality solutions are frustrated by the complex structure and speed of the decision-making processes at all levels of government. Does it come as a surprise that we are paying the penalties of doing nothing as far as granting air quality and filtration technologies their due attention? Air filter selections are usually the last aspects that come up for attention and attract investments. Therefore, it has come to a situation where everyone is at the mercy of their own filtration devices – that is, wearing a personal mask around the clock.

### THE EMBERS OF PANDEMICS

In the midst of our air quality challenges, we had no qualms about allowing emissions to escalate. The scourge of air pollution that humanity faces today requires that we all pay close attention to how we urbanise, live and pollute our atmosphere. For decades, we thought we had all the air quality answers. Today, the pandemic has forced us to ask different questions. The pain that future generations will inherit as a result of our being in “complacency mode” will lead to more pandemics, cities getting submerged, food supplies facing decimation, nations getting displaced and conflicts heading in the direction of escalation. Environmental agreements require far more than the ink used in signing them. Our promise to the environment comes at a price. We must scale up our ambitions and follow through with appropriate actions. We must embrace the sense of urgency about bringing environmental agreements into force. Until pollution quests are answered, the embers of pandemics will continue to burn. [ccme](#)

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## SHARED SAVINGS ENERGY PERFORMANCE CONTRACTING IS THE WAY FORWARD

SSEPC can deliver substantial reductions in total cost of ownership, argues **Henrique Pereira**, CEO, taqa Solutions...



**T****OTAL** Cost of Ownership (TCO) is a concept that aims to analyse the actual full cost of purchasing a product, beyond the mere purchase price. It includes factoring all the costs associated with a product or piece of equipment right from the initial purchase price through its maintenance, use and disposal, including operational costs, such as energy consumption, among others, thus combining direct and hidden costs. Therefore, it is a much more accurate basis for determining the true value of an investment. Reducing TCO is a widely used strategy adopted by companies, as it directly impacts the company's financials. Subsequently, a reduced TCO can:

- Lead to enhanced long-term financial performance
- Act as a guidance tool for optimising direct and/or indirect costs
- Help determine ROTI (Return on Time Investment) or ROI (Return on Investment)

Over the years, as more and more companies in different industries have adopted the practice of evaluating TCO, many methodologies have been formulated. While there is no global solution for determining TCO, it is recommended to consider the specifics of each activity sector for a more accurate analysis.

Most TCO methodologies, in general, normally include the following significant factors:

- Purchase price: Cost price, including the supplier margin
- Acquisition cost: Purchasing department operations
- Associated cost: Custom duties, packaging, logistics, etc.
- Cost of ownership: Depreciation costs, inventory management, warranty, etc.
- Operation cost: The cost of usage, including utility costs (electricity, water, gas, etc.) and consumables
- Maintenance costs: Preventive and reactive maintenance, spare parts, etc.
- Disposal cost: Costs of recycling or resale, etc.
- Non-quality cost: Non-compliance in processes, etc.

Some of the common challenges we see with the calculation of TCO include companies adopting numerous methodologies and tools; failing to define a singular methodology, which proves to be a challenge for fair comparisons; difficulty in determining the exact scope of operating costs for equipment; and the lack of foresight relating to unpredictable increase in costs over time. This, in turn, significantly impacts the accuracy of the TCO, misleading professionals into poorly informed procurement or maintenance decisions of their equipment.

### TCO and the Energy Services industry

When considering new equipment for energy efficiency and retrofit programmes, clients generally feel the initial cost is too high, and thus, finance – or the lack

of capital – becomes one of the biggest barriers in commercial energy efficiency programmes. The initial price often causes confusion or does not depict a true picture, as it only reflects one small part of the big picture. Few consider the operational costs – namely, energy cost – repair and maintenance costs, which are usually many times higher than the initial cost.

It is important to gradually change this landscape, through the provision of Energy Performance Contracting (EPC), a form of financing for capital improvements that provides funding for retrofits by leveraging the associated cost reductions.

By implementing a Shared Savings EPC (SSEPC), it is possible to provide all engineering, equipment, capital expenses (CAPEX) and operational expenses (OPEX) for an energy efficiency project. All project costs are subsequently paid for from the savings generated by the project and shared with the owner from day one. Once the project fees are paid in full, the facility owner will continue to benefit financially from the energy savings. Through this model, the ESCO retains ownership for any new equipment that was installed and financed, which is then transferred to the customer upon contract conclusion or early exit.

The most attractive part of an SSEPC is that there is an ESCO that will finance the project and make sure



the customer has the new equipment needed, assuring that the savings will occur, without any initial capital expenditure to the organisation. Facility owners and operators find much value in this type of ESCO service, because it improves operational efficiencies, improves indoor air quality and comfort conditions, reduces maintenance costs over time and provides new equipment by monetising operational savings streams. By leveraging operational cost reductions, one benefit to the facility owners is that these desirable technologies, which would typically be capital expenditures, can be paid for through savings. The larger benefit is reducing operating costs without capital budget expenditure. This type of EPC approach is based on the transfer of technical risks from the customers to the service providers, based on performance guarantees from the service providers. This agreement allows facility owners to optimise their existing facility's energy capabilities, enhancing profitability while dramatically reducing their organisational carbon footprint.

Delving further into equipment, it is a fact that in most cases, upgraded or new equipment is needed to implement energy efficiency measures (EEMs). In this scenario, an ideal approach would be for the service provider to finance, design, install and manage energy efficiency measures (EEMs), the equipment for which is leased to customers through the contract period, with the customer not incurring any costs for new equipment repairs or replacements. The service provider would fund the new equipment, tools, construction equipment, transportation, labour, and other direct and hidden costs. Through the contract term, the service provider would then manage the performance of the EEMs. In this result-oriented approach, energy efficiency savings bring down the equipment costs, thus offering the customer a blended product/service price. Equally important, by considering all aspects of the equipment TCO in the scope of the EEM, from design to engineering, and from procurement to operation and maintenance, the true return of that investment can also be correctly captured by the savings generated by the EEM, leading to a much more accurate financial calculation of ROI.



For the purpose of this article, let us consider the replacement of high-value equipment – chillers, which in most existing facilities are generally poorly maintained. In this example, the chillers consume AED 200,000 per year in operation cost and AED 50,000 in maintenance cost. They are also not performing as per expectations in the summer, leading to unaccounted for non-quality costs. A new replacement chiller system costs approximately AED 600,000, and since new chillers are more efficient they bring consumption down to AED 125,000 per year; they also bring annual maintenance costs down to AED 25,000. A typical ROI calculation would only account for the benefit in operation costs (AED 75,000 per year) to offset against the investment cost (AED 600,000), leading to a simple payback of eight years. In the current market context, this project would never see the light of day.

However, if we factor in the additional yearly maintenance savings (AED 25,000), the simple payback is reduced to six years. Moreover, if an ESCO would now be engaged into an SSEPC project, the customer's initial investment would be reduced to zero, as would be the maintenance costs (since they are taken care of by the ESCO). The customer would have a yearly benefit of AED 125,000, considering both operational savings and maintenance savings, and would share this benefit with the ESCO. Assuming the ESCO would take 80% of the savings, the customer would pay AED 100,000 to the ESCO every year, while keeping AED

25,000 in their own pockets. The ESCO would finance the full TCO for this project, leading to an eight-year contract with the customer.

This means that the full TCO of the EEM has been accounted for in the project, with the customer benefitting from AED 25,000 per year of net savings. The customer would receive brand new chillers, meaning postponing future capital expenditures by at least another 15-20 years, without any CAPEX or OPEX costs for the chillers for the next eight years of the contract. This value-proposition represents a major incentive for the customer to retrofit their facilities with the support of an ESCO.

Without TCO analysis, most companies grossly miscalculate their operation and maintenance budgets, which results in uncontrolled downtime, slower decision-making and other site complications. A sophisticated service provider can strive to break the finance barrier that challenges energy optimisation projects. Through financing, it is indeed possible to help other ESCOs, equipment suppliers, services providers and building owners reduce their TCO. **ccme**

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# THE OUTSIZED ROLE OF ERP IN ACCELERATING DECARBONISATION

Housseem Jemili, Partner, Bain & Company Middle East, and Uwe Schmid, Expert Partner, Bain & Company Frankfurt, explore different options available to organisations for making substantial progress in their sustainable development goals

**A**LTHOUGH the benefits of digital technology on sustainability efforts are becoming clearer to some executives, many are still unaware of the specific ways in which enterprise technology can help an organisation achieve its net-zero-energy ambitions – namely by monitoring total emissions and by improving efficiency across the value chain.

But enterprise technology has always enabled organisations in their business and transformations, and it has an outsized role to play in helping organisations meet their carbon-reduction goals in at least three ways.

- **Enabling the transition:** New applications will be critical to help companies monitor their total greenhouse gas emissions and track their progress towards meeting reduction targets.
- **Accelerating the pace of change:** By increasing efficiency across a company’s operations as well as its interactions with suppliers, enterprise technology can help reduce emissions across the value chain.
- **Rethinking enterprise technology solutions:** Finally, the enterprise technology function

will need to rethink some of its basic operating principles to reduce the emissions of its own operations.

## **ENABLING THE TRANSITION: MONITOR EMISSIONS**

As with any improvement programme, reducing emissions requires understanding the organisation’s starting point and then measuring progress. Without those insights, executives are flying blind, unable to identify the largest opportunities for improvement, and have little capacity to monitor progress. Increasingly, organisations have a wide variety of options from which to choose for measuring not only emissions but also for meeting environmental, social and corporate governance (ESG) performance goals...

### **Software as a Service (SaaS)**

**solutions:** Many providers of risk management and ESG monitoring software are expanding their capabilities to deliver reports on carbon footprint. The market is still young and fragmented, so organisations have a wide range to choose from, depending on their specific industry and compliance needs.

**Bespoke solutions:** Some organisations build their own systems to track emissions and other ESG data. This is

a natural outgrowth of the way that most organisations start out, tracking and collating their own carbon data. Investing in a robust, custom solution may be the right approach for organisations planning to use this capability for strategic advantage.

### **Enterprise Resource Planning:**

Enterprise Resource Planning (ERP) systems, which already have extensive experience with meeting regulatory constraints in certain verticals, are upgrading to monitor and report on carbon emissions. ERP systems already have access to the relevant resources, including data management systems. Organisations can use ERP’s current capabilities as a starting point and then extend it by gathering data from a much more varied data landscape.

**Distributed ledgers:** Blockchain technologies offer traceability, transparency, security, speed and efficiency – all of which could be used to track carbon emissions within an organisation and across its supply chain. Blockchain ledgers could also be used for tracking rare metals – for example, cobalt used in batteries – or food supply chains.

**Platform providers:** All three major cloud service providers – Amazon Web

Services, Google Cloud Platform and Microsoft Azure – are well positioned to provide advanced analytical services. All three are developing ESG strategies based on providing cloud and analytical services and using technologies that include Artificial Intelligence, Machine Learning, the Internet of Things and smart grid solutions, which they are piloting with key customers.

### **ACCELERATING THE PACE OF CHANGE: IMPROVE SUSTAINABILITY**

Enterprise technology can also play an outsized role in helping to manage emissions and other sustainability issues across the organisation and beyond, up and down the value chain. Enterprise software will also be critical in helping companies ensure sustainability throughout the value chain. Some of this will come from third-party services running on company ERP and procurement systems.

### **RETHINKING SOLUTIONS: REDUCE IT'S CARBON FOOTPRINT**

Enterprise technology operations have a significant carbon footprint. Data centres, in particular, have come under increased scrutiny recently, as the extent of their energy consumption has become more widely known. Increasingly, enterprise technology leaders will need to include sustainability as a factor in their decision-making, and they could become a model for other functions in the organisation.

### **ENTERPRISE TECHNOLOGY'S ROLE IN GETTING STARTED**

Any Chief Information Officer who's heard the statement "sustainability is the new digital" knows that they are being called upon to help lead the next big transformation while the previous one is still underway. There are many steps to take, but three important actions will help get the process started.

**Play defence or offence?** Every company's sustainability journey begins with a clear understanding of the starting point and a vision of what it hopes to accomplish. Defining sustainability strategy requires



Uwe Schmid



Housseem Jemili

**“ This is particularly important: In most cases, companies have not carefully monitored their carbon footprint, and so learning to do so is akin to developing new muscles**

executives to decide whether they are playing defence (doing what's necessary to meet regulatory or other compliance demands) or whether they want to play offence (investing to gain a competitive advantage).

**Identify capability gaps.** This is particularly important: In most cases, companies have not carefully monitored their carbon footprint, and so learning to do so is akin to developing new muscles. Some vendors offer ESG maturity assessments that can help companies understand where they are in the process and what they must do to reach their goals.

**Build sustainability into the organisation.** IT operations have been designed with cost and speed efficiency in mind, but now architects and developers must begin to consider sustainability, as well. IT leaders will have to guide these decisions so that

sustainable becomes an integral part of the design and measurement of these systems, reflected in key performance indicators. The shift to a cloud-based infrastructure is one that's ripe for rethinking.

Given all these opportunities for enterprise technology to play a significant role in reducing emissions, executive leaders of the function should feel empowered to become champions of the sustainability transformation. As technology enables more reductions and greater sustainability that number is likely to rise. [ccme](#)

#### **Acknowledgment**

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## KITCHEN TOPS, YES, BUT NO SAY ON HVAC

**Dharmesh Sawant** highlights the need for bringing property buyers into key purchase decisions relating to the lifespan of the air conditioning system in question, its IoT compatibility, independent controls and serviceability, with a view to achieving greater energy efficiency, and lower total cost of ownership (TCO)

**WE** are fortunate we are living in the GCC region, where the respective leaderships of the constituent countries have taken good care of citizens, residents and tourists alike during this terrible pandemic. The structured pandemic-specific public health initiatives have resulted in faster recoveries of those infected, when compared to previous such recorded instances the world over.

A plus of the recovery is that the property market is bouncing back with numerous launches, especially in the villa and townhouse segments. The region's real estate sector is driven by powerful sentiments. Many expat residents prefer to move into their homes rather than renting one. Even though this is one of the more important decisions for the family structure, considering that hard-earned money goes into the purchase of property, buyers typically do not have much of a say in

many aspects of construction. Only viable features, like doors, windows, kitchen tops, tiles and cabinet finishes are covered in the contract; the buyer has no say whatsoever, contractually, to access the design of, say, the air conditioning system.

The situation is a bit odd, because it is the buyer or end-user who is paying for MEP services and yet is unaware of such important aspects as the lifespan of the air conditioning system, IoT compatibility, independent controls and serviceability. In such circumstances, it becomes an even greater responsibility for project managers of developers, consultants, contractors and suppliers to ensure the required checklists are ticked to ensure the buyer or end-user enjoys a trouble-free experience, energy efficiency and low total cost of ownership (TCO).

However, based on my experience as a buyer, with a background in the HVAC

industry, I find many important criteria are overlooked, despite multiple levels of evaluation.

I would like to list some of them...

### **Combining two bedrooms with an air conditioning unit in three-bedroom apartments, villas or townhouses**

This is a common design practice in the industry. I understand the reason behind this is to reduce the capital cost, as it will reduce not only one indoor unit but will also reduce one outdoor unit, and the respective piping, cabling, isolators and breakers from the purchase list.

In the case of a multiple-villa compound, air conditioning can be a substantial cost, but the downside is the lack of availability of an independent temperature control zone. In the case of combined bedrooms air conditioning

unit, where one of the rooms is used by children and the other by grandparents, issues of a serious nature can crop up. Both age groups require extreme temperature settings, and a combined setup leads to inconvenience. Also, in the event of a need for isolation, there is a high possibility of contamination from mixing of air in the two rooms.

#### Absence of IoT compatibility

Nowadays, everything is available on hand-held devices, including payment gateways, vaccination card, National ID card and residence visa. In short, digital is all pervasive. If so, why not air conditioning control and monitoring, especially in the case of apartments and villas?

People travel to their home countries on vacation during the hot and humid summer months. It is recommended they keep the air conditioning running continuously – even 24x7 – to prevent ingress of moisture and the resultant invasion of mould.

It is well understood that running the air conditioning continuously leads to wastage of energy. Now, if

air conditioning units are part of an available mobile app-based control system, they could be operated for limited hours, including a system of weekly programming, to maintain the correct humidity level in the room.

This feature is available with most manufacturers of air conditioning systems. But I still find to my dismay that AC specs in commercial villa

#### Serving the living room and the maid's room with the same unit

The pandemic has led to an increase in standalone houses, as opposed to apartments. In some of the mega townhouse projects, I have seen developers combining the living room and the maid's room, on the ground floor, with one air conditioning unit. There are three problems in this design...

“ Since the unit would be running during daytime, the exhaust air discharge coming at 24 degrees C could help reduce the condenser unit suction air temperature

compounds are bereft of any controls. Typically, the project ends up with an air conditioning system that cannot be hooked on to an app-based controls system. The party affected by the lack of thought and intent is the buyer or the end-user.

a) **Inefficient design:** The air conditioning unit will run during daytime, as the living room is invariably occupied. It will run in the nighttime, as well, as the maid's room is occupied. This approach leads to loss of valuable energy. Also, continuous running of the unit will reduce its lifespan.



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**b) Lack of redundancy:** In case of malfunction of the air conditioning unit, owing to parts failure, leak in the pipeline or electrical problem, the whole floor will be without air conditioning. A smart way of sorting out the problem would be to install a unit to serve the maid's room, the passage and the open kitchen; another unit would supply to the living room. In the event of failure of one unit – say, the one in the living room – the space would still have some cool air flowing in.

**c) Noisy and bulky machines:** If one unit is serving the whole ground floor, it is a given that it must be bigger, which inevitably would mean a higher air flow noise. The bigger height of the unit would also bring the false ceiling down in the kitchen area. Typically, architects and interior designers exert pressure on other stakeholders and generally do not compromise on the height of the false ceiling. As a result, the indoor unit is kept in a cramped attic, leading to poor access to the filters.

### No service data logging capability

“After sales service” is the least of concerns for any developer, consultant or contractor, because the AMC is the responsibility of the buyer or the end-user. When it comes to DX/VRF systems, it's an old-school, reactive service regime. AMC is treated as just a matter of cleaning the filters, cleaning the condenser coil with water and checking the cables. That's it! Oh, and the AMC-provider will repair the units in the event of a breakdown! In fact, they like the opportunity of a breakdown, because they can earn more, as spare parts are usually not covered in the AMC.

Nowadays, most manufacturers of air conditioning units can provide data loggers, which can help service providers get information on important service parameters, like suction and discharge temperature, ambient temperature, refrigerant inlet and outlet temperatures, compressor frequency and EEV opening. If these data loggers are connected to Wi-Fi, the parameters can be accessed remotely in real time. The data harnessed can help the service providers analyse the performance of the units and predict potential degradation or failure. Typically, the cost of a data logger is not more than AED 1,000 per villa or townhouse. Even if developers cannot provide data loggers,

they must at least ensure the units are digitally compatible for a later-day intervention.

### Connection of fresh air to the indoor unit

Generally speaking, bathrooms in townhouses don't have an exposed wall. So, the only way to bring outside fresh air to the indoor unit is through the duct running from the roof or shaft. I have seen many projects having a central fresh air fan, supplying untreated fresh air to all the indoor units through ducts in the shaft.

The problem with this design is that when the first-floor bedroom air conditioning unit is off, hot and humid untreated fresh air is dumped in the attic. It is then only natural that many residents complain about the smell of stale air and mould in the attic. This problem is very common in August, September and October, when Relative Humidity is high.

Given this situation, it is better to ensure independent duct connection to each indoor unit, which can suck the fresh air from the open shaft.

### Some installation practices to reduce operating electrical consumption

As an engineer, I see many MEP designs in townhouse and villa projects. I do believe that adopting simple steps can help reduce electrical consumption through operating air conditioning systems...

**a) Directing the central exhaust behind the living room outdoor unit.** Since the unit would be running during daytime, the exhaust air discharge coming at 24 degrees C could help reduce the condenser unit suction air temperature, leading to reduction in electrical consumption.

**b) Locating the outdoor unit in such a way that it gets shade between 2pm and 4pm.** Doing so would ensure a drop in the condenser unit suction temperature by at least 5 degrees C.

Some of the above points are simple and logical, but I still find the design to be otherwise. I am sometimes surprised that design faults come from reputed developers, whose core pillar is sustainability.



One of the reasons for design flaws might be capital cost, but I believe some basic guidelines should be established and, equally important, must be adhered to without compromise and consideration of cost. By the way, the cost of air conditioning equipment in the sale price of a townhouse or villa is approximately two per cent. Of course, there is a possibility that the adoption of some of the measures I have discussed would increase the cost of equipment by 0.5%, but it is still minimal. Pit the cost against the tremendous satisfaction a buyer or end-user would draw through experiencing clean and healthy air, delivered though operating the system in as energy efficient a manner as possible, and the result could be repeat customers and word-of-mouth promotion – in effect, buyers would be unrecruited marketing personnel.

Many a times, consultants and developers focus only on specific brands, but I do believe it is more important to focus on the design of the air conditioning system. I say this, because if the design is wrong, however good the brand may be, the cost of rectification will be extremely high and painful. [ccme](http://ccme)

The writer is Sales Director, VRF (UAE, Oman & Qatar), Hisense Hitachi Air-conditioning Company. He has written this article in his personal capacity as an enlightened end-user, though, by virtue of several years working in the HVAC industry. He may be contacted at [dharmeshsdd@yahoo.com](mailto:dharmeshsdd@yahoo.com).

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# GOING NORTH WITH INNOVATIONS

How does Scandinavia seem to consistently score big on sustainable development measures?

By Charmaine Fernz | Features Writer





**S**CANDINAVIA is known for its vast verdant landscapes and archipelagos, stretching from the European mainland to the Arctic. The northern part of Europe is known to be the front-runner in implementing green regulations and, broadly speaking, working towards a greener future. Sweden, for instance, was the first country in the world to pass an environmental protection act, in 1967. The country also

hosted the first UN conference on the global environment, in 1972. Since then, Sweden has not looked back, managing to grow its economy substantially while reducing carbon emissions and limiting pollution.

These measures have trickled down to several industries in the country, and the HVAC industry is part of this strategy. Olli Seppänen, President, FINVAC (Federation of Finnish HVAC Association) and Editor-

in-Chief, *REHVA* Journal, believes there is a strong explanation for the high interest in green HVAC technology in Scandinavia.

Reliable supply of heating has always been a necessity in the region, owing to frigid climatic conditions. Most of the energy is imported in Sweden, Denmark and Finland, but the energy use and sources are very different. Energy use per capita is quite high in the region, except in Denmark. This is mainly due ▶





to energy-intensive industries – forestry and metallurgy – in Finland, Norway and Sweden.

The main source of electricity generation in Norway is hydropower. Finland has a high percentage of nuclear, which is still increasing. In all the Scandinavian countries, the share of renewable sources is much higher than in the EU, on average, but for different reasons. In Norway it is due to hydropower, in Finland and Sweden it is due to the forest industry, which uses all waste material from the processing of wood for the generation of electricity. In Denmark, the high percentage of electricity is mainly due to wind power. As the primary energy use of buildings is about 40% of energy demand, seeking out higher energy efficiency has been on the regional agenda for decades. Further, the harsh climate has also made people demand a good and comfortable indoor environment, which again has boosted the R&D work in the HVAC industry. Scandinavia has the two important bases covered.

## MARKET OVERVIEW

According to research reports from Research and Markets, the global HVAC market is set to rise from USD 93.2 billion in 2018 to USD 133.2 billion by 2023. In the same period, the European market is expected to rise from USD 22.6 billion to USD 30.5 billion. Both the global and European markets are set to grow at a CAGR of 6.2%. The HVAC filters market alone has a stand-alone projected CAGR growth of 6.5%, with a projected value of EUR 7 billion by 2024.

Seppänen elaborates that currently, the focus of R&D work in Scandinavia is on energy efficiency, renewable energy sources and the indoor environment. But after the Paris Climate Agreement, in December 2015, more and more focus has been on the measures that need to be adopted to reduce greenhouse gas emissions. The consensus is that the buildings of the future must be net-zero-energy structures over their lifetime.

**“ The Finnish government has already decided to place a ban on the burning of coal for energy production by 2029. This will lead to innovative new use of integrated energy systems**

When moving more and more towards the use of renewable energy sources, demand-side management, as a strategy, becomes vitally important. The use of the energy should match with the production. ICT applications, with reliable building simulation and control systems, are equally important.

With regards to renewable energy, according to Eurostat, Sweden stands out, with two-thirds (66%) of the energy used for heating and cooling in the country in 2020 stemming from renewable sources – mostly biomass and heat pumps. Finland at 58% and Denmark at 51% closely follow suit, with more than half of the energy used for those purposes

coming from renewables. Iceland, an EFTA (European Free Trade Agreement) country, stands out, with 80% of renewables – mostly geothermal energy – used for heating and cooling.

## REGIONAL OBSESSION

So, what is the regional obsession with energy self-sufficiency? With seeking out sources of renewable energy? Lars-Olof Johansson, from Engelholms KylKonsult, recounting the genesis of the phenomenon, explains how it all started in 1973, when the regional governments provided incentives, post the war between Israel and the Arab countries, which saw the emergence of the oil crisis. Across Scandinavia – and for that matter, across most of Europe – there was little scope of procuring oil to even heat buildings, a desperate necessity. During the dark days of the crisis, the Swedish government, in a bid to reduce oil consumption, laid down a programme for people living in independent houses and buildings to improve insulation, a bid to reduce energy consumption. Furthermore, the government paid up to 35% of the installation cost, as a subsidy. The

initiative, which lasted 15 years, saw an almost 20% drop in energy consumption in the country.

This was a huge step. The refrigerant regulation followed in 1992. As per the initiative, the government handed out substantial subsidies and loans, with low or zero interest, to encourage more green effective installations.

Sharing a recent perspective, Maja Zoric, Trade and Invest Commissioner, Poland, in Business Sweden, speaks of how environmental change and rapid technological advancement are sweeping aside historical approaches, making way for innovative, sustainable and connected technologies and businesses.

“Industry players are being forced to rethink and restructure the way they meet both consumer and regulation changes,” she says.

A report from Business Sweden states that Europe’s HVAC market will be primarily driven by the demand for smart connected HVAC solutions. The European market for smart connected air conditioning is driven by commercial, non-residential buildings, while smart connected heating is in demand in the residential sector.

The booming apps industry has changed the way building managers control lighting, ventilation and many other processes and the ability to better measure big data, paving the way for more efficient HVAC systems. Further, in a highly competitive market, there is also a need for continued differentiation, and many HVAC companies see customer service as an area where they can stand out and add extra value.

Sharing his view on the industry, Ronak Monga, Lead Business Development Manager – Commercial Building Services (CBS), GRUNDFOS Gulf Distribution FZE, explains that Scandinavian governments, along with the European Union, are driving sustainability in several ways, not least by having legislative measures in place for minimum efficiency and performance requirements. “Initiatives, such as green tax breaks, taxation on CO<sub>2</sub> emissions and green funds for innovation are among the long list,” he says. “These encouraging initiatives are making businesses take steps to improve their carbon and water footprints, helping them become more sustainable.”

Elaborating further, Johansson says that Scandinavia is still working on the EU regulations that were started in 2006. “However, these regulations have a schedule, when refrigerant types should be phased out and replaced with natural refrigerants, the deadline for which is between 2025 and 2027,” he says.

### DOING BUSINESS DIFFERENTLY

The future for Scandinavian countries is doing business differently, as the global demand across all sectors is connectivity, automated control systems and remote control access. These prevalent features are here to stay and are also contributing to a transformation in the HVAC industry.

Zoric, speaking from a Sweden perspective, highlights three clear trends



revolutionising the HVAC and filters industry, and delivering opportunities for accelerated growth for HVAC and filter producers. These are stricter energy efficiency guidelines, connectivity and automation and a consolidating market.

Interestingly, with change always comes the challenge. This is especially true in Scandinavia, with a growing interest in advanced technologies in the HVAC industry. This is because good heating has always been a necessity due to the cold climate in the Norse region. As the primary energy use of buildings is about 40% of energy demand, high energy efficiency has been on the agenda for decades. The harsh climatic conditions have also made people demand a good and comfortable indoor environment. These requirements have also given rise to several challenges within the industry.

Johansson says the main challenges for the construction industry are to reduce energy consumption, the impact on the environment and global warming, and to design or construct buildings that have a long lifetime and a reduced lifetime cost. “These are the major concerns, as we do not just consider the installation costs but look at it like LCC (Life Cycle Costs),” he says.

Seppänen says that in the long run, the EU, with Scandinavian countries in the first row, will stop combustion as a source of heating energy – first coal and, later, the other fuels. The Finnish government has already decided to place a ban on the burning of coal for energy production by 2029. This will lead to innovative new use of integrated energy systems, not only on the building level but also on the community level.

In Scandinavian countries, this development is expected to have a major impact, as there are no extensive natural gas networks to supply cleaner fuel for

heating. One of the big problems is how to convert district heating systems to supply heat for the cities without coal-fired plants. The challenge is huge but also offers opportunities for the industry to develop innovative solutions for the changing market. To boost this development, the City of Helsinki is preparing the international one million-euro Helsinki Energy Challenge, a competition to find a solution for replacing coal in the most sustainable way possible. This is a challenge in a city where currently about 90% of buildings are heated mainly with coal-fired power plants.

### THE FUTURE BECKONS

With a strong focus on sustainable initiatives, Scandinavian countries are leading the way by adopting new trends for many other countries to follow. In Johansson’s view, the next bet would be fuel cells and hydrogen. “Fuel cells are a very good invention,” he says. “When used in a car, the only residues that comes out are water and steam, with no emissions.” Interestingly, the source for the fuel cells is hydrogen, which can be split up by electrolytic catalysts from water, which can be used as petro hydrogen or green hydrogen. “The concept of using hydrogen was unknown a few years ago but now is developing at supersonic speed,” Johansson points out, adding that hydrogen fuel cells are very easy to produce.

Johansson explains that for the HVACR industry, hydrogen can be used as a source of power for remote installations, characterised by the absence of grids. Hydrogen power can also be used to complement conventional grids, to reduce operating costs. “Interestingly, one can have a small shop in a remote village or forest without any grid network,” he says. “With hydrogen fuel cells, you have the air conditioning running.” [ccme](#)





# ‘ONE FOR THE BOOKS’: ORGANISERS OF HVACR MEGA SHOW, AHR EXPO, SAY

The show’s successful return, after a pandemic-forced hiatus in 2021, reignites energy for all things HVACR, organisers say

**THE** AHR Expo returned in the last week of January to Las Vegas after a forced hiatus in 2021, International Exposition Company (IEC), the organisers of the show, said through a news release.

After two years of uncertainty and a longing to reunite the industry, the event represented an eagerness to return to business, drawing 30,678 attendees, IEC said. What's more, the success of the show signals a reignited energy for all things HVACR and the community's readiness to take on the challenges and opportunities ahead with renewed optimism, IEC said. "It was impossible to miss the energy in the halls this year," said Mark Stevens, Show Manager. "There have been some heavy ups and downs across the industry in recent years, and we, as a community, needed to feel the inspiration that happens when we gather together under one roof. The 2022 AHR Expo surpassed any expectation – our exhibitors, attendees, associations, speakers and everyone involved made this event one of the most special we've ever hosted. If you were there, the camaraderie was hard to miss. This industry is strong, and we are back on track to tackle the challenges before us."

According to IEC, attendees were eager to be back in the booths experiencing new products and methods that support their work in the field. It was evident from every corner of the show floor that this industry is bursting with prospects, IEC added. "My main reason for attending the AHR Expo is the whole experience," said Arizona tradesman and first-time attendee, Brendan Bowie. "You get to meet all the people who make the things that we buy and look up to and use every day. It is a lot of the vendors that we spend money with, because they make superior products. I talked to presidents and CEOs of companies that I buy products from every day, every week, every month. Instagram stories are not going to tell what AHR is, it's the whole experience. Going to AHR matters, because you have to see what's going on out there. I had the opportunity to see so much new. We're trapped in vans every day on the job,

you need to see what's out there."

According to IEC, a total of 1,573 exhibitors spread out over 443,769 square feet in the Central and North halls, packing the floor with an explosion of innovation and new products. Given the time apart, there was plenty to take in, as exhibitors launched new technology, products and ideas that came to life since we last gathered in Orlando, IEC said. "We and our [manufacturer] member companies that exhibited were very pleased with the quality of the Las Vegas Expo," said Stephen Yurek, President & CEO, AHRI. "We heard comment after comment about the quality and number of attendees and how grateful everyone was to get back together with their industry colleagues and customers. We are grateful to our [manufacturer] members for moving ahead with what turned out to be a really good show, and we look forward to seeing some of them in Guadalajara in September and more of them next year in Atlanta."

According to IEC, inside the exhibitor booths, this year, company

said John Schneider, President, HVACR Technologies Americas, Emerson. "After last year's pause, the Expo provided a much-needed, in-person touchpoint, and we were thrilled to have our valued customers join us in celebrating our Copeland brand's 100-year milestone during our pre-show customer event. This year, we also sponsored the Podcast Pavilion, which was a great opportunity for us to align with industry influencers, as their role in this industry continues to expand. Ultimately, all our businesses and brands experienced a great turnout, and we are looking forward to even more attendance in 2023." Added Sarah Beyerlein, Everwell Parts: "It does not matter where you come from or where in the industry you're involved in, the AHR Expo is the most remarkable yearly event where we all share our passion and expertise in the HVAC industry. It cannot be missed out."

### Innovation sets the course

On Monday, January 31, the show celebrated the 2022 Innovation Award Winners with a private reception.

**“We’ve been hosting this show for many years, and while it is always a great showing of our industry, this year felt like a new chapter for HVACR. We are a strong community, and we now have the attention this industry deserves to thrive on the global stage**

reps and attendees were busy catching up on lost time. The challenges in the supply chain and other COVID-related delays have opened the door for new ways of thinking about partnerships, IEC said. Emerson, one of the exhibitors, endorsed the organizer's statement. "Emerson has always valued the customer engagement opportunities provided by the AHR Expo and the forum to showcase our sustainable solutions that are helping to reduce global impact while improving comfort, efficiency, performance and food safety in the HVACR industry,"

Members from each winning company were invited to share food and drink and be among industry cohorts also being recognized as leaders in shaping the future of HVACR, IEC said. The 2022 AHR Expo Innovation Award Product of the Year Award, IEC said, went to Danfoss, for their Danfoss Turbocor VTCA400 Compressor, a winner in the Cooling category. Lisa Tryson, Market Communications Director, Danfoss, said: "Danfoss is honored to be recognized with the product of the year award for our VTCA400 oil-free compressor. Our industry is at the forefront of many critical

trends, and innovation is vital to meet the challenges ahead. The AHR Expo is a great way to showcase these latest technologies.”

Stevens, speaking on behalf of the organizer, said: “We were honored to celebrate our 2022 winners with a more intimate celebration. The pace they each are setting for the future of HVACR is astounding, and collectively in each of the sectors they are raising the bar on how we are shaping the industry. Congratulations to all our 2022 winners, and to Danfoss for their leadership in innovation. As the industry looks ahead to changes on the horizon for HVACR, innovation from our exhibiting companies continues to push to new levels.”

Partnerships born through crucial in-person networking help to propel new ideas into the marketplace, IEC said. Jacques Beaudry-Losique, CEO, Enginuity Power Systems, said: “The AHR Expo is an environment uniquely suited to making high-level connections and business partnerships, as well as finding the latest state-of-the-art appliance product technology as well as supply chain and distribution channels. We were honored to be awarded the 2022 Sustainable Solutions Innovation Award, further validating our products to help homes and businesses save energy and achieve their sustainability goals.”

### Education Program... something for everyone

In the Education Program, attendees were invited to sit in on more than 80 free sessions, covering topics from a wide range of industry experts, IEC said. Added to the roster this year was an industry panel discussion led by leaders representing all sectors of the industry, including Mick Schwedler, 2021-2022 President, ASHRAE; Yurek; Talbot Gee, CEO, Heating, Air Conditioning, Refrigeration Distributors (HARDI); Roberta MacGillivray, President, National Air Filtration Association (NAFA); and Dominick Guarino, CEO, National Comfort Institute (NCI). Bryan Orr, of HVAC School for Tech by Techs, and industry podcaster and well-known training advocate, moderated the panel, which included a discussion on the current state of HVACR as well

as threats and opportunities, as the industry recalibrates to a new normal post-pandemic. Speaking during the discussion, Yurek said: “Our focus used to be on the box, on the equipment and the installation of it. Now, we need to address the entire HVAC system to provide efficiency and comfort. The change we will see over the next few years will be nothing we’ve seen before.” Schwedler said: “Our industry has never been more essential. The public became aware of what our industry does. We are fully connected as a world, with more people involved in problem-solving.” And MacGillivray said: “Before COVID-19, there was a tradeoff between energy efficiency and human health. As we solve the pandemic issue, we must continue our focus on how IAQ affects human health and productivity.”

Additional education program highlights included an overview of intellectual property in HVACR, by Wil Rao, an IP and Patent attorney in the greater Chicago area; a breakdown of warranty and callbacks from Bryan Orr; lessons learned from the supply chain, a panel discussion hosted by HARDI and moderated by the HVAC Jerks; and many more targeted discussions highlighting current opportunities, threats and methods across the industry. “It is absolutely fantastic to see the AHR Expo make such a strong comeback in Las Vegas,” said Jeff Littleton, ASHRAE Executive Vice President. “Bringing professionals from around the world back together to learn and share new technologies, with health and safety as a top priority, affords us the opportunity to continue moving the critical work of our industry forward.”

### Strength in community

Perhaps one of the most inspiring sentiments shared throughout the floor this year was the sense of community that HVACR embraces, IEC said. Many of the industry’s workforce remained on the frontlines throughout the pandemic and relied on the daily connection with professionals through social media and other points of communication, it said adding there was an overwhelming sense of relief and contentment to

be gathering again face to face at the industry’s largest event. “My first AHR was amazing, I really enjoyed meeting my social media community in person,” said Ashley Lynds, Texas tradeswoman Ashley Lynds. “Everyone was so welcoming, and I was able to network and make additional connections for future business. I can’t wait for Atlanta!” The Podcast Pavilion returned for its second year as a show feature, IEC said, adding it was a clear fan favorite, as attendees packed the pavilions each day for live recordings from their favorite industry talents. Eric Aune, with Mechanical Hub, said: “We’ve been attending this show for over a decade. This year was different, there was a new connection with social media and a great podcast lineup. I like the direction they are taking things.”

### Until we meet again

AHR Expo will head back to Atlanta for the 2023 show, bringing with it the positive energy established in Vegas, IEC said. Eager exhibitors have already reserved booths and discussions of travel plans among attendees are underway, IEC revealed, adding that it’s safe to say we are back to business! “Vegas is one for the books,” Stevens said. “We’ve been hosting this show for many years, and while it is always a great showing of our industry, this year felt like a new chapter for HVACR. We are a strong community, and we now have the attention this industry deserves to thrive on the global stage.

“We look forward to hosting many of our international attendees who couldn’t make it this year because of travel restrictions and supply chain issues. We have big problems to solve and hefty aspirations to meet, as our industry touches literally every part of society and our everyday lives. The success of the 2022 AHR Expo is proof that we are poised to take on anything together. We are all excited to be a part of such a vibrant community, and we look forward to planning a stellar show for you in Atlanta. We’ll see you soon!”

According to IEC, the 2023 AHR Expo will take place at the Georgia World Congress Center in Atlanta, Georgia. Registration will open in summer 2022. [ccme](#)





# In pictures...



PHOTOS COURTESY INTERNATIONAL EXPOSITIONS COMPANY/AHR EXPO

# Empower announces achieving annual revenue of AED 2.464 billion

District cooling utility reports net profit of AED 936 million achieved for the year 2021, and growth of 9.3%

By CCME Content Team

**EMIRATES** Central Cooling Systems Corporation (Empower) announced a record total revenue of AED 2.464 billion for the fiscal year 2021, with a growth of 9.3% compared to 2020. Making the announcement through a Press release, the company reported a net profit of AED 936 million, resulting in an increase of four per cent, compared to the year before.

Speaking on the occasion of the announcement, Ahmad bin Shafar, CEO, Empower, said: “The year 2021 was an important milestone in the history of Empower at all levels. The achievements during the past year are unprecedented in quantity and quality, and due to various factors, most notably the strategic business model, which is based on increasing investment in infrastructure and being proactive in adopting and developing modern technologies. These factors collectively paved the way for the success of our expansion in the district cooling market of Dubai, driven by the significant growth in the distribution networks and the largest diversified projects in the Emirate, which significantly increased the quantity and quality of the projects portfolio and the beneficiaries of Empower.”

Bin Shafar highlighted the global superiority of Empower in providing high-quality and environmentally friendly district cooling services with international standards, noting that the company has succeeded in concluding three historical acquisitions, the biggest of their kind in the world, within a span of three months, last year, which is a strong indicator that Empower will take its performance to unprecedented levels and will record historical financial results in the coming years.



Ahmad Bin Shafar

Bin Shafar pointed out that 1,413 buildings were being served by Empower with its district cooling services by the end of 2021, including Marsa Al Arab, One Za’abeel, The Residences Dorchester Collection, Uptown and Al Wasl 1. Connecting these and many other huge developments last year resulted in an increase of 17% in district cooling consumption, compared to 2020, Bin Shafar said.

He also indicated that the company had worked hard in 2021 to provide district cooling services to various regions of Dubai by expanding its network to more than 369.014 kilometres by the end of the year, with an increase of 5.5% compared to 2020, which allowed the company to raise its share to 79.5% of Dubai’s district cooling market.

In 2022, he said, Empower will focus on significantly expanding the number of district cooling plants, and extending service transmission networks to cover all regions in the Emirate of Dubai.

## ACQUISITIONS

Empower said the year 2021 will remain

a significant milestone in its journey, as it concluded three major acquisitions in three months with a total value of AED 2.040 billion, which it added is a true reflection of its leading position in the district cooling industry.

According to Empower, the process began in August with the acquisition of Nakheel’s district cooling assets for AED 860 million, with a cooling capacity of 110,000 refrigeration tons (RT). This was in addition to the previous acquisition of ‘Palm Utilities’ and ‘Palm District Cooling’ for AED 1.83 billion, the utility said. The second was followed days later by signing a deal with the ‘Meydan City Corporation’, worth AED 100 million, with a total cooling capacity of 382,000 RT to be served, it said. Besides these two deals, Empower acquired the district cooling systems serving Dubai International Airport with a total value of AED 1.1 billion, it added.

Bin Shafar said Empower’s global leadership in the district cooling industry and its remarkable success in adopting unprecedented technology in operation, production and provision of services enabled it to hold unique strategic

partnerships with the most prestigious establishments and mega projects. "Today, we intend to take expansion steps during the coming period, including penetrating into new local and regional markets," he said.

### EMIRATISATION

Empower said that in line with the growth of its operations and its expansions in Dubai, it has succeeded in expanding its workforce base to reach 841 employees in 2021, with the percentage of Emiratisation in the company exceeding 15% of the total employees, while the percentage of citizens in senior positions reached 48%. The utility indicated that the percentage of female citizens has increased to 46%, while the percentage of male citizens has reached 54%. This, it said, reflects its approach to achieving gender balance in the work environment, attracting the best national talents, and enhancing its role in driving economic development, in line with the UAE Vision 2021

### MAJOR SECTORS

Empower said it caters to the demand from various vital sectors in the Emirate of Dubai, as it provides district cooling services to more than 64% of the residential buildings and 15% of the commercial and office buildings in Dubai. The hospitality sector's share rose to 14%, with an increase of one per cent over the previous year, it said. The health sector accounted for three per cent, while the remaining four per cent is distributed among education, entertainment, retail and other sectors, it said.

Bin Shafar said that the company will continue supporting various sectors in reducing carbon emissions and enhancing Dubai's endeavours to achieve a green economy and sustainable development.

### DISTRICT COOLING PLANTS

In 2021, Empower announced the commencement of operations of its new plant in Dubai Production City, with a capacity of 47,000 RT, which is considered as one of the major plants in the region to serve customers in Dubai Production City. The launch of the new plant, Empower said, came as part of its strategy to meet the increasing demand for its high quality and environmentally friendly district cooling services.

The utility also announced the award of the main contract for the construction of its new plant in Al Khail Gate area, with a total value of more than AED 133 million, whereby the plant will provide district cooling services for a capacity of 32,000 RT.

Empower confirmed that it is moving forward with thoughtful investments to expand its operations in Dubai, as part of its commitment to modernise and develop its facilities and technical staff in order to meet the increasing demand for its services from individuals, establishments and companies. Empower said its share of the total district cooling market in Dubai is about 79.5%.

### AWARDS

Empower spoke of how it won two gold awards from the International District Energy Association (IDEA) in the categories, 'Number of Buildings Committed' and 'Total Building Area Committed' in 2021. The utility said it has been winning gold awards from IDEA for the past several years, including 2016, 2017, 2018 and 2019. It spoke of how it has also won multiple awards for more than 16 times in different categories during the past years, in addition to several awards won in various other global conferences and exhibitions.

Empower spoke of how it has received LEED Gold certification for its Barsha Heights district cooling plant. "Empower has a clear vision and effective strategies for expansion, in line with the vision of the wise leadership in the transition towards sustainability," Bin Shafar said. "We seek to add new production capabilities that contribute to reducing costs and enhancing energy efficiency through the use of the most advanced technologies that we have developed.

"Today, we are very proud to provide our district cooling services to the 'world's most beautiful building' – the 'Museum of the Future', in the heart of the commercial district of Dubai. The Museum was launched by His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, on February 22."



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# Yas Holding wins SAP Award

Earns gong for “Innovation and Leadership in Asset Management”

By CCME Content Team



SAP and Yas Holding officials during the Awards ceremony

**YAS** Holding, the UAE-headquartered investment company, received the “Innovation and Leadership in Asset Management” Award, instituted by SAP.

Making the announcement through a Press release, SAP said Yas Holding won the award for its Enterprise Asset Management (EAM) project, during SAP’s Digital Supply Chain Event, held on 17 January at the Expo 2020 Dubai.

Mina Hakim, Group Chief Supply Chain Officer, Yas Holding, and Boris Rusafov, Chief Information Officer, Yas Holding, received the award.

SAP said the recognition was in appreciation of Yas Holding’s implementation of the EAM solution within its group companies, which began in February 2021, following industry best practices.

Murshed Al Redaini, Group CEO, Yas Holding, said: “This recognition from SAP is a testament to our operational best practices and the hard work of all our teams. We are thankful for the award and will continue to advance the digital transformation underway at our companies to enhance our efficiency and sustainability, as we continue on our path to be an agile, innovative, and progressive organisation.”

Commenting on the award, Suresh Vaidhyathan, Group Chief Financial officer, Yas Holding, said: “Our mission is to optimally manage our company assets over their useful life. We believe the SAP EAM solution will deliver better return on investment and optimize the cost of ownership, in addition to improved efficiencies.”

SAP said Yas Holding and its local

and international multi-sector subsidiaries have been expanding their operations, thereby increasing their fixed assets to meet various business requirements. As part of the group’s digital transformation plan, SAP’s Enterprise Asset Management application was launched across various entities to manage the asset lifecycle from acquisition to disposal. This move will enable Yas Holding and its subsidiaries to enhance visibility, traceability, control, demand planning and consolidation and best utilisation of its assets, SAP said. Furthermore, SAP said, the solution seeks to deliver significant enhancements to asset performance, cost reduction in onboarding maintenance workers, increase in asset lifecycle, reduction in energy costs, improvement in asset data quality, increase in maintenance worker productivity and reduction in operational costs, SAP added.

## BAC launches TrilliumSeries Adiabatic TRF Cooler

Equipment is suitable for cooler regions in the Middle East, company says

By Charmaine Fernz | Features Writer, *Climate Control Middle East*

**T**HE Baltimore Aircoil Company (BAC) recently launched the TrilliumSeries Adiabatic Cooler – TRF model. According to the company, the model has been developed to achieve maximum adiabatic cooling along with high redundancy. Rafael Van Eijcken, General Manager – Middle East, Turkey & India, Baltimore Aircoil Middle East LLC, said, “The new product will be suitable for regions in the Middle East with medium relative humidity and shorter warm peak summer periods.”

Van Eijcken said that while there is growing attention in the region to optimise and balance the energy-water nexus with installing sustainable cooling solutions, the adiabatic cooling products are most suitable for climate zones characterised by medium relative humidity and shorter warm peak summer periods. “The Middle East region has limited areas with these characteristics, and accordingly, demand for such solutions may remain slower,” Van Eijcken said.

The product solutions can find sufficient fit with projects for smaller cooling capacities or combined installations in the Middle East, where during 6-8 months of the year, adiabatic coolers are used and cooling towers cover the long warm summer peak periods.

Elaborating on the benefits of the cooler, Van Eijcken said: “The BAC Trillium product benefits from in-house coils and in-house finned coil engineering, manufacturing and testing. The technology is proven with large installation bases in Europe and US.” The additional features are reliability with multiple fans and higher redundancy, followed by an optimised design for water and air distribution, and low maintenance and ease of inspection, with all components being easily accessible, he added.

With a new focus, the BAC Trillium will be best suited for some areas in the northern part of the Kingdom of Saudi Arabia (KSA), Iraq, Levant, Oman and inland United Arab Emirates, Van Eijcken



Rafael Van Eijcken

said. “The new product is designed to run and operate most safely and hygienically, compared to spray-on-coil technologies, where often high drift rates, algae growth on coil, water splash accumulation can cause unhygienic operating conditions and risk to impact the environment,” he said, adding that the Trillium adiabatic cooler fits a safe implementation into HVAC projects, where they may be installed close to other building ventilation equipment.

## Honeywell collaborates with Oman’s Meras

Initiative aimed at supporting strategic sustainability and energy initiatives, company says

By CCME Content Team

**H**ONEYWELL signed an agreement with Oman’s Meras, the energy, engineering, construction and project management services provider, to support Honeywell’s expansion to conduct sustainability and energy projects across Oman.

Making the announcement through a Press release, Honeywell said Meras, which is part of the private equity firm, Oman Investment Corporation, will develop a capability centre to support Honeywell, as it implements energy and sustainability projects in the country, including innovation, resources, design, contract and procurement.

According to Honeywell, Meras has a strong presence in Oman, with strategic ties with private and government entities related to infrastructure, healthcare, hospitality and education. The collaboration, the company said, will enable strengthening the local capability around sustainability and energy domains. It will also support requirements to implement energy efficiency-related measures and carbon-neutral objectives, it added.



Honeywell and Meras representatives during the signing ceremony

Honeywell said it has a long-standing history in Oman, having worked on a wide range of projects, including airports, oil & gas projects, and on refining and implementation of petrochemicals-related technologies.

# ALEC appoints Head of Digital Construction

Andy Boutle, in the newly created role, will focus on digitalisation of entire value chain for projects the firm undertakes

By CCME Content Team

**A**LEC, a part of the Investment Corporation of Dubai (ICD), appointed Andy Boutle as its Head of Digital Construction. Making the announcement through a Press release, ALEC said that Boutle, in the newly created role, will focus on the digitisation of the entire value chain for projects the firm undertakes, with an emphasis on increasing workflow communication and vertical efficiencies.

ALEC pointed out to an analysis by McKinsey Global Institute (MGI), which reported investing in technology and innovation as one of the key factors in boosting the construction sector's productivity by up to 60%. But while digital technologies – including Building Information Modelling (BIM), Augmented Reality, Virtual Reality, robotics, drones and cloud software – are heralding a new era of possibilities and efficiencies for the global construction sector, there has generally been a lag in adoption of these technologies in the region, ALEC said.

“While the pandemic has certainly been a catalyst of transformation, there is still a long road ahead for the digitalisation of the sector,” said Kez Taylor, CEO, ALEC. “The benefits, ranging from improving quality and safety to reducing costs and project timelines, and to increasing profits, are abundantly clear. But there remains trepidation in the region, largely due to the steep learning curve and challenges around integration between systems, and deciding what investments will yield maximum positive impact. As a leader in the sector, ALEC has successfully leveraged the latest technologies on several projects and believes it is now time to double down on these digital investments. In doing so, we will inevitably promote technology adoption among our customers and partners, leading to a digital-first mindset across the industry that advances the sector towards greater

efficiency, quality and sustainability.”

ALEC said its commitment to innovation is evidenced in the advanced technologies it leverages in its projects, such as the One Za'abeel mixed-used luxury development in Dubai. For this project, the company said it implemented 72 new digital initiatives, including the use of 3D printing, AI-based time and attendance recording, robotic drilling, digital material and asset management and HoloBuilder, a 360-degree imaging software, for creating a comprehensive photographic database of every area on the project. ALEC said that it is advocating the digitalisation of the UAE's construction sector and that it is looking to ensure such technologies are utilised on an increasing number of developments.

With Boutle on board, ALEC said it has already initiated the process of achieving the BSI Kitemark ISO 19650 certification for information management using BIM. The company said it is also deploying a new Enterprise Resource Planning (ERP) system that will digitalise its processes to enhance business intelligence through analytics and reporting.

“ALEC's increasing focus on digital transformation in recent years is making our operations more productive, efficient, sustainable and accurate, whilst reducing risk and resource wastage,” Boutle said. “This translates to an improved level of service and quality of product for our customers. In parallel, our partners are benefitting from the streamlining of collaborative processes made possible by our expertly integrated systems. We also recognise that the challenges faced by the construction sector as a whole – skills and labour shortages, productivity issues, attitudes towards change, outdated procurement models and more – have the potential to be addressed by industry-wide digital transformation. However, they cannot



Andy Boutle

be solved overnight, or independently, by a single organisation. ALEC is, therefore, committed to collaborating with key industry stakeholders to increase the overall maturity of the market and promote the drive towards interoperability and standardisation, both of which are critical to the transformation of the sector.”

With over 20 years industry experience, Boutle has worked in various engineering and management roles for both consultants and contractors, with a more recent specialisation in BIM, ALEC said. As the former Head of BIM – Construction Division at the Kier Group, Boutle played a leading role in driving positive industry change, while co-authoring several strategies, including “Digital by Default”, the Kier Group's Digital Vision, ALEC said. Boutle, it added, has also served as the Engagement Co-Lead and Executive Team – UK BIM Alliance, where he helped provide independent leadership and support to the UK's built-environment for the adoption of BIM across the industry.

# ZāZEN Properties delivers its first sustainable community project in JVT

ZāZEN One is Trakhees LEED green building certified, with scope of reducing 440 metric tons of CO<sub>2</sub> emissions, company says

By CCME Content Team



**R**EAL estate developer, ZāZEN Properties, announced the completion of its first project, ZāZEN One, in the heart of the JVT community.

Making the announcement through a Press release, ZāZEN said the project offers mid-market eco-conscious buyers all that a community has to offer, within a building.

According to the company, ZāZEN One is Trakhees LEED green building certified, with the scope of reducing 440 metric tons of CO<sub>2</sub> emissions, annually. It also incorporates solar panels, helping to generate approximately 25% of the building's annual electricity requirement, the company said. These savings, it added, are passed on directly to homeowners in the form of reduced service charges for common areas.

Commenting on the announcement, Madhav Dhar, Co-Founder and COO, ZāZEN Properties, said: "We are very proud to have delivered on our promise and completed our first project on time and with the highest of standards. With



Madhav Dhar

ZāZEN One, we truly believe we have created something unique in the market, in terms of design, facilities and living experience, for the average consumer. We are aligned with the Dubai 2040 vision of making this the best city to live in and will continue to focus on sustainable community-centric developments as we expand our portfolio."



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## Data key focus in MEFMA's Facility Management conference

Event will run under the theme, 'Technology and Data-Driven Facility Management – The Core of Business Excellence and Sustainability'; will unveil first ever MEFMA Awards

By CCME Content Team

**T**HE Middle East Facilities Management Association (MEFMA) will conduct MEFMA CONFEX from March 14 to 17 at the Address Hotel, Dubai Marina. Making the announcement through a Press release, MEFMA said the four-day flagship event will comprise two days of panel discussions, multiple workshops and exhibitions and two days of site visits.

MEFMA said the event will explore the theme, 'Technology and Data Driven Facility Management – The Core of Business Excellence and Sustainability', with the aim of identifying key data and analytics relevant to the growth and sustainability of the FM industry.

According to MEFMA, the CONFEX is the largest FM event in the Middle East region, and is expected to bring together key industry players, stakeholders, top FM professionals and decision-makers, in addition to government representatives, developers, and FM service providers and suppliers. Each year, the event opens new opportunities and identifies challenges to present the latest and leading trends in the FM industry, laying a clear roadmap for the future, MEFMA said. The event also highlights the local market's critical role in the continuous development of the regional FM community, particularly at a

time when green building practices are driving demand for facility management in the GCC region, MEFMA added.

According to MEFMA, the 2022 event promises to be even more significant, as it prepares to host the first edition of the MEFMA Awards. After a decade of connecting the Middle East facility management industry, the initiative of hosting the awards ceremony is set to boost the competitive levels amongst the industry market and its key players, showcasing various success stories, celebrating outstanding contributions, and the industry's culture of excellence and best practices, MEFMA said by way of articulating the objectives of the Awards. The top three winners of the event will qualify for the Global FM Awards of Excellence in FM 2022, along with nominations from other FM associations around the world, MEFMA said.

Jamal Lootah, Co-founder and President, MEFMA, said: "We are extremely excited to have our next edition of MEFMA CONFEX. Like always, we look forward to providing the industry with a unique opportunity to network and connect with the top FM professionals and decision-makers, including government representatives and other key personnel. We expect a lot of participants this year with notable and renowned speakers joining us to share insights on the

industry's challenges, and highlighting our theme for the year, 'Technology and Data Driven Facility Management – The Core of Business Excellence and Sustainability'. This year also holds special significance as we host the MEFMA Awards for the first time to recognize excellence and to honour members of the Association who have tirelessly contributed to the industry."

The first two days of the event will see discussions on such topics as 'Technology Transformation Approach in the changing world of FM', 'FM transformation strategies' and 'The Role of Leadership Towards Technology Adoption.

Ali AISuwaidi, Vice President of MEFMA and Vice Chair of Global FM, said: "Over the last few years, we have seen many changes in the industry. As a result of the increasing demand for operational activities and cost-effective integrated services, the FM market has tremendous potential for growth. MEFMA aims to unify standards, promote sustainability and embrace technological innovation to improve efficiency, quality and excellence in FM services, while supporting regional and global initiatives in digital transformation through such events. We are excited to be focusing on such evolving topics for this year, which is sure to bring with it many opportunities to excel and drive successful business outcomes."

MEFMA said CONFEX 2022 is supported by key sponsors, with Initial Saudi Group as Diamond Sponsor, Imdaad as Gold Sponsor, and Emirates National Facilities Management and GECO Mechanical and Electrical Ltd. Company as Silver Sponsors.

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# ENGIE hosts art exhibition on climate change

Uses the language and power of art to drive greater awareness towards climate change at the France Pavilion at the World Expo in Dubai

By CCME Content Team

**G**LOBAL low-carbon energy company, ENGIE hosted an art exhibition at the France Pavilion at the World Expo in Dubai to drive awareness for climate change and to highlight its efforts.

Determined to achieve net-zero carbon by 2045, ENGIE collaborated with Syrian artist, Marie Mohanna on this initiative, the company said through a Press release. The exhibit emphasised ENGIE's efforts in highlighting the UAE mangrove rehabilitation project – 'Blue Carbon,' through a unique artwork along with another art exhibit focused on 'Women Fighting for Climate Change'.

The 'Women Fighting for Climate Change' art exhibition showcased female faces within ENGIE's organisation, who are determined to positively impact the planet. By depicting ENGIE women from all levels of the organisation, the portraits showcase how these women contribute to ENGIE's efforts to strike a balance in the energy world as it is heading for a massive revolution to meet today's climate-related challenges. ENGIE's 'Blue Carbon' project recently concluded the success of its second phase. In partnership with the Environment Agency of Abu Dhabi (EAD), and Distant Imagery, the project uses highly

innovative drone planting technology to plant more than 35,000 mangrove seeds in the Mirfa lagoon in Abu Dhabi to further support ENGIE's decarbonisation goals.

The art exhibition highlighted Marie's expertise as a graphic novel illustrator and showcases 12 pieces located outside the France Pavilion, ENGIE said.

"We are delighted to partner with the art community to help drive awareness and showcase our collective efforts towards climate change," said Florence Fontani, Chief Communications and Sustainability Officer, ENGIE Africa, Middle East and Asia (AMEA). "The exhibits exemplify how small actions, compounded over time, make a considerable difference in the fight for climate change and how this movement requires patience, resilience and passion, especially in educating people. We trust that our new collaboration with Marie Mohanna has inspired visitors.

"The France Pavilion at Expo 2020 has been a fantastic partner throughout our journey here. It has been a pleasure to align with the team, who have provided us with immense support as we march toward our goal to reach net-zero by 2045."



Marie Mohanna and her art exhibits

The 'Blue Carbon' project intends to preserve the natural biodiversity that dots the coastline of Abu Dhabi. The essence of the project is to highlight the actions required to limit the impact climate change has on the planet. The artwork depicting the project used the UAE's national colors and ENGIE brand colours and demonstrated how innovation through drone technology could support positive climate change to safeguard the essential role that mangroves play in the local ecosystem.

Mohanna said: "I'm grateful to have partnered with ENGIE and for the opportunity to work on the Blue Carbon Project. It was inspiring to visit the site and meet with several personalities who are the main driving forces behind ENGIE's fight for climate change in the region. I hope that my artwork will inspire future generations to come."

# ebm-papst Middle East announces leadership change

Company appoints Marco Duarte as Managing Director; incumbent, Koen van Nistelrooij will join Europe operations

By CCME Content Team

**e**bm-papst Group has appointed Marco Duarte as Managing Director, with his tenure beginning from April 1, the company announced.

Incumbent Managing Director, Koen van Nistelrooij will relocate to Europe, where he will join the Group's European operations.

ebm-papst said that with Duarte at the helm, it will continue to serve its customers with the services and products

they have come to expect and that it will be a strategic partner in the present and the future of their respective businesses.

Speaking on the occasion of the announcement, Nistelrooij, addressing the customers, said: "I would like to take this opportunity to thank you for supplying the best fans and motors in this competitive region the past 2.5 years. With the changing markets, the COVID-19 pandemic and all other challenges, I believe that the Middle East region is one of a kind, with great people to work with.



Koen van Nistelrooij



Marco Duarte

I could not have done it without your support, and therefore, I want to thank you! Please join me in supporting Mr Marco Duarte in his new role."

## Phileo PM appoints Non-Executive Director

Colin Gibbons comes with over 40 years of HVACR experience, 28 of which have been in the Middle East

By CCME Content Team

**P**HILEO PM Aircondition & Refrigeration Trading, which supplies HVACR equipment, components and spare parts through a proprietary digital platform, has appointed Colin Gibbons as Non-Executive Director.

Making the announcement through a Press release, Phileo said the core management team of the company has a vast amount of technical, sales and marketing knowledge in the HVACR industry in the Middle East markets. Gibbon, it said, is on board to enhance the company's capabilities.

According to Phileo, Gibbons comes with over 40 years of experience in the HVACR industry, 28 of which have been in the Middle East. Phileo said that over the years, Gibbons has gained enormous in-depth market insights and a broad knowledge of air conditioning

and refrigeration products and systems. He will offer his support and guidance to Phileo, assisting the company in providing customers with quality products and solutions that will satisfy their initial and long-term requirements, the company said.

Phileo said it is a strong advocate of growth and development and for that it is important to actively mentor employees and businesses. Gibbons, it said, is a perfect fit, for he believes in sharing the knowledge and experience accumulated over the years for the benefit of society and humankind. This underlying sentiment is the reason Gibbons has joined Phileo, it added.

Phileo's business model offers a diversified range of products and services. With rapidly rising energy costs, it is imperative that cost-effective and energy-efficient products and systems are supplied and installed for the long-



Colin Gibbons

term benefit of the end-user and the environment, the company said.

Also, the rapid growth in population has contributed to the economic and industrial realignment throughout the Middle East, Phileo said. Many markets are quickly moving towards self-sufficiency in all types of agricultural food products, dairy, meat, poultry, fish and beverages. Such foresight encompasses a high demand for a versatile range of refrigeration processes for freezing, cold storage and distribution centres, Phileo said, adding that it has aligned itself with strategic partners who offer high-end brand products and systems for the cold chain market sector.

## Taqeef reports sustainable cooling performance at Expo 2020

Says the VRF units it has fitted in the Czech Republic, Germany and Pakistan pavilions are a strategic fit for the mega event's core theme of sustainability and technology of the future

By CCME Content Team

**T**AQEEF said the new generation Midea variable refrigerant flow (VRF) units it fitted in the Czech Republic, Germany and Pakistan pavilions at Expo 2020 are helping the projects achieve exemplary sustainable cooling.

The edutainment-focused Germany Pavilion, located within the Sustainability District of Expo 2020, features 190 units, which are cooling 37,600 square feet of indoor space, in line with the project's vision of highlighting innovations and sustainable solutions to inspire, fascinate and thrill visitors, Taqeef said. The Pakistan Pavilion, in the Opportunity District, is fitted with 37 units and is cooling 24,918 square feet of space, while the Czech Republic Pavilion has 45 units

for cooling 7,777 square feet of space, the company added.

VRF technology, Taqeef said, can help greatly reduce the carbon footprint of buildings by alternating the refrigerant volume in a system to match a building's precise cooling requirements. This means the system utilises only the minimum amount of energy required to maintain set temperatures, and it automatically adapts according to room occupancy levels, detected via sensors, it said. In short, VRF technology achieves temperature requirements by cooling only when it needs to, which saves on energy usage, energy costs and carbon emissions, the company added.

The adaptable and modular VRF technology, which sees multiple indoor units linked to a single outdoor unit, is a

strategic fit for the Expo's core theme of sustainability and technology of the future, showcasing large multi-space smart HVAC solutions to a world stage, Taqeef said.

"There is a clear correlation between VRF and energy savings, and it's important that high-profile projects, like the Expo – which have such significant strategic importance to a global audience – showcase the most advanced and efficient HVAC systems," said Diya Alami, Operations Director, Taqeef. "Midea's VRF presents clear and auditable cost, infrastructure and energy-efficiency benefits, and long-term proficiency in terms of operating expense (OPEX) with reduced electrical consumption. It also delivers powerful and adaptable cooling, which makes it the HVAC technology of choice for buildings large and small that

# European Investment Bank, Solas in energy efficiency initiative

The two are joining forces to invest in energy efficiency in buildings across the European Union, EIB says

By CCME Content Team

**T**HE Solas Sustainable Energy Fund ICAV, a new EU-focused fund targeting energy efficiency investments, has reached its first close with €140 million. Making the announcement through a Press release, the European Investment Bank (EIB) said it has committed a €30 million cornerstone investment to SSEF, backed by the European Fund for Strategic Investments (EFSI), the main pillar of the Investment Plan for Europe. EIB said that as one of the largest providers of climate finance, it supports projects that promote the priorities and objectives of the European Union.

According to EIB, the SSEF also signed an agreement with the Private Finance for Energy Efficiency (PF4EE) support scheme, a joint initiative launched by the European Commission via the LIFE programme and the EIB. One of the goals of PF4EE is to encourage private institutional investors, such as insurers and pension funds, to invest in European energy efficiency infrastructure, particularly in the small- and medium-sized (SME) sector. Further cornerstone investors of SSEF are the Ireland Strategic Investment Fund (ISIF), IDEAL insurance as well as MEAG, the asset manager of the Munich Re group.

EIB said that by virtue of being a specialist investment advisor in the energy efficiency sector, Solas Capital will advise the fund. EIB said Solas

Capital partners with a wide variety of leading energy service companies, project developers, equipment manufacturers, and public-sector bodies across the European Union to help facilitate their access to tailor-made financing and enable new investment in energy efficiency.

According to EIB, SSEF will offer funding for energy-saving business models focusing on the renovation of existing infrastructure, particularly buildings, using established and reliable energy-efficient technologies, such as modern heating and cooling systems, combined heat and power units, solar rooftops, building fabric, LED lighting, etc. Projects in both the public and private sectors will be supported, including the SME sector, which faces more challenges in securing finance, EIB said.

According to EIB, the project would entail an initial investment into a project portfolio of energy efficiency measures in buildings. It added that buildings are responsible for 40% of the European Union's energy consumption, and 36% of its CO<sub>2</sub> emissions. To achieve near zero emissions in buildings, crowding-in private institutional capital will be essential, as public funding is not sufficient. SSEF, EIB said, is offering the market a unique financing solution and is closing the gap between

energy efficiency funding needs and institutional investor requirements.

Kadri Simson, The Commissioner for Energy, said: "Investing into energy efficiency, renewable energy generation and building renovation is at the core of the European Green Deal and key to bringing down energy bills. The Solas Sustainable Energy Fund will combine the financial support from EFSI and PF4EE to mobilise affordable private financing for investments in the energy performance of buildings, including onsite renewable energy production. The PF4EE guarantee will set the gold standard for equity investment fund initiatives and engage institutional investors in green assets. This will bring us one step closer to achieving the EU's Green Deal ambition of becoming climate neutral by 2050."

Thomas Östros, Vice-President, European Investment Bank, who is responsible for energy financing, said: "As Europe's climate bank, the EIB is proud to be a cornerstone investor in the Solas Sustainable Energy Fund, which will help bridge the major financing gap for energy efficiency projects. Reducing the energy use in buildings is crucial to achieving a carbon-neutral economy in Europe by 2050. We believe that our commitment in this fund will catalyse further investments to meet the immense building renovation challenge."

# 'Cooling matters' theme of World Refrigeration Day 2022

Some 475 million tons of food currently lost could be saved by wider application of refrigeration

By CCME Content Team

**F**OOD available when and where we choose. Apps that make our cell phones personal assistants and inanimate products SMART. Vaccines to protect us from disease, and medicines to cure disease. Cities thriving in places once inhabitable. They all require cooling. Saying so, the Secretariat of the World Refrigeration Day announced the theme of the event, to be held on June 26, as 'Cooling matters', at a side session of the recently concluded AHR Expo, in Las Vegas.

"Cooling is at the very heart of modern life," said Steve Gill, Founder, World Refrigeration Day. "It enables people to live and work comfortably, it saves lives, it enables people to achieve. The need for cooling is everywhere, it touches lives in fantastic, though often unnoticed ways. However, we look at it, cooling matters to us.

"Our objective is to make the public aware of cooling's essential benefits, how cooling impacts daily life, and how technology choices foster environmental well-being of future generations."

According to the Secretariat, despite policies, standards and codes related to the refrigeration and air conditioning industry, there is still significant lack of public understanding of cooling's importance, even though issues like refrigerant transition, emissions reduction, and maximising energy efficiency have been addressed for decades by governments due to global policies and binding international frameworks.

At AHR, partnering groups for previous World Refrigeration Day campaigns described how the day serves as a platform to educate the

public about cooling's benefits, the Secretariat said. Past campaigns targeted refrigerant choices that protect the ozone layer, using the cold chain to distribute food, medicines and vaccines, and promoting "cool" careers. Together, those partnering groups represent a half million engineers and technicians, more than a thousand suppliers of equipment services, and near 200 governmental bodies and agencies: United Nations Environment Program OzonAction, ASHRAE, European Partnership for Energy and the Environment, Federation of Ibero-American Air Conditioning and Refrigeration Associations, Global Food Cold Chain Council, International Institute of Refrigeration, Indian Society of Heating, Refrigerating and Air-Conditioning Engineers, and Union of Associations of African Actors in Refrigeration and Air Conditioning, the Secretariat said. They are among some hundred national and international associations that are World Refrigeration Day allies, it added.

"The public can make choices that minimize environmental impacts when they select, operate and maintain cooling equipment," Gill explained. According to the International Energy Agency, the average efficiency of air conditioners sold today is less than half of what is typically available on the shelves – and one third of best available technology.

According to the Secretariat, buildings generate nearly 40% of annual global CO<sub>2</sub> emissions. Of those total emissions, it said, building operations are responsible for 28% annually, while building materials and construction are

responsible for an additional 11% annually. "How RAC systems are maintained and operated is one of the most important actions the world can take to address climate change," said Rajan Rajendran, representing ASHRAE's Refrigeration Committee and the Global Food Cold Chain Council.

The challenge will only become greater. Ayman Eltalouny, representing UNEP OzonAction, said: "Half of the buildings standing in 2060 have not yet been built. There are 3.6 billion cooling units in use today. By 2050, that number is expected to be 9.5 billion. If left unchecked, emissions from cooling appliances are expected to double by 2030. They will triple by 2100, driven by heat waves, population growth, urbanization and a growing middle class. Moving to best available cooling technologies would reduce cumulative emissions by 38 gigatons of CO<sub>2</sub> emissions by 2030. This would avoid future greenhouse gas emissions equivalent to 2018 levels."

And there is the increasing need for food. Rajendran said: "Due to population growth, the world will need 60% more food by 2050. The unfortunate reality is much of the world's food supply is lost due to waste. Increasing refrigeration in emerging economies is required to meet this growing demand. Some 475 million tons of food currently lost could be saved by wider application of refrigeration.

"We must communicate to the public that there is value to cooling if we hope to have policies in place which encourage use of low carbon emitting refrigeration and air conditioning."

Gill said: "Cooling Matters will tell the story of how our wellbeing depends upon cooling and how cooling technology choices can safeguard the well-being of future generations. We encourage the whole refrigeration and air-conditioning industry to join us in celebrating World Refrigeration Day 2022. Join the global community conversation using the hashtags #coolingmatters and WREFD22."

## MARKETPLACE

# Healthcare workers face risk of abnormal exposure to toluene

It is important to protect medical environments from VOC contamination through a proper monitoring protocol, says ION Science

By CCME Content Team

**I**t is important to monitor VOCs when it comes to sterilisation and the medical equipment industry, said ION Science, which provides VOC monitoring solutions with its fixed photoionisation detection (PID) technology.

According to ION Science, one of the most important areas for VOC monitoring is the sterilisation and packaging of medical equipment. It is common practice for manufacturers to use ethylene oxide in decontaminating products prior to leaving the site. While this is a highly effective method, it is a harmful VOC and needs careful monitoring when in use. It is critical to reduce the potential exposure to staff, product and even end-users, and therefore monitoring the levels of ethylene oxide that are used to remove potential contaminants, must be done with a safety-first approach prior to distribution, ION Science said.

In medical environments, such as hospitals, there is also a potential VOC hazard. Toluene, often used in medical equipment, for the preparation of instruments, and in laboratories, was a commonly reported VOC hazard in a 2015 study<sup>1</sup>. The study revealed that staff coming into contact with toluene were in some cases receiving up to 16 times higher doses of VOC exposure than other staff who didn't work in these spaces, ION Science said, adding that appropriate VOC monitoring, such as fixed sensors in these workspaces and buildings, would have been able to detect the hazardous levels and ultimately reduce the health risk to staff.

For manufacturers that handle large volumes of products or operate across multiple sites, ethylene oxide

may be used frequently and at multiple stages of the manufacturing cycle, ION Science said. This requires not only highly sensitive levels of detection to ensure that the correct levels are being adhered to at particular stages, but also there is a requirement to have many sensors on and around the site, so any potentially harmful levels are detected quickly, the company added.

ION Science said it works globally with companies within the sterilisation and medical equipment industry providing a complete VOC monitoring solution.

The company claimed its Falco technology provides customers with a complete monitoring assurance of VOCs at every stage of production. The Falco needs little in the way of maintenance and will reliably record data on VOC exposure wherever needed, the company claimed. The Falco is enabled with both Modbus and 4-20mA output protocols for site-wide networking capabilities, it said, adding that this gives confidence that all equipment is sterilised within the legal requirements.

According to



the company, Falco has four detection ranges available, including 0-10ppm, 0-50ppm, 0-1,000ppm and 0-3,000ppm, ideal for any level of sensitivity monitoring.

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# ATMOsphere releases 'Natural Refrigerants: Applications and Practical Guidelines'

Textbook is now available in print, digital and bulk copies, organisation says

By CCME Content Team

To address the global training barrier for the uptake of natural refrigerant systems, ATMOsphere (formerly shecco) released *Natural Refrigerants: Applications and Practical Guidelines*, the English translation of the 2019 German textbook, *Natürliche Kältemittel – Anwendungen und Praxiserfahrungen*.

Making the announcement through a Press release, ATMOsphere said it partnered with technical publisher, VDE Verlag to translate the German textbook. VDE Verlag had published the German version, written by top academics in the field, ATMOsphere said.

According to ATMOsphere, the book offers a comprehensive practical guide to working with natural refrigerants, including CO<sub>2</sub>, ammonia, hydrocarbons and water. The English edition has been improved and adapted for a global audience, particularly with reference to standards, it said. Print and e-book editions of the English translation are available at the VDE online shop for €59, it said. Combined pricing (e-book + print) is available for €82.60, it said.

According to ATMOsphere, the textbook presents the experiences and techniques of industrial refrigeration and transfers them to commercial refrigeration applications. It also covers general conditions and legal requirements for the use of natural refrigerants, the economic efficiency of

the refrigeration systems and additional information on handling these systems, it said. Tables, pictures and system diagrams are used to show examples of practical implementations, it said.

The book was the brainchild of Professor Michael Kauffeld of the Karlsruhe University of Applied Sciences in Germany, who wrote the chapters on thermophysical properties, ice slurry and N<sub>2</sub>O as a refrigerant for applications below -50°C (-58°F) focusing on air-cycle technology, ATMOsphere said. He is one of the textbook's three editors. The others are Michael Eckert, Co-Owner and Chief Engineer at the ammonia refrigeration company, Kälte Eckert, and Professor Volker Siegismund of Baden-Württemberg Cooperative State University in Mosbach. Each chapter is written by an expert in the specific area, ATMOsphere said. Professor Armin Hafner of the Norwegian University of Science and Technology wrote the chapter on CO<sub>2</sub>; Eckert contributed the ammonia chapter; Joachim Schadt, Managing Director and Owner of Secon, a company that builds hydrocarbon chillers, and his colleague Nina Schultz wrote about hydrocarbons; and Jürgen Süß, former CTO of Efficient Energy, the company that developed the water-only eChiller, together with his colleague Florian Hanslik and Kauffeld, covered water as refrigerant, ATMOsphere said.

"For many years, international organizations like UN Environment

Program (UNEP), UN Industrial Development Organization (UNIDO) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) have been looking for appropriate teaching material for natural refrigerants in order to enable Article 5 countries to leapfrog directly from CFCs or HCFCs to the final and only environmentally sound solution: natural refrigerants," Kauffeld said. "We are delighted to be able to offer our contribution to the training of refrigeration engineers and technicians worldwide via this textbook written by renowned experts in their respective natural refrigerant. You'll find several hundred years of accumulated knowledge about natural refrigerants in our book. I hope that the book will be able to make a difference."

Ilana Koegelenberg, Co-Founder and Market Intelligence Manager, ATMOsphere, said: "Although the process was more challenging than anticipated, I want to sincerely thank the authors and wider project team for their commitment and hard work to the vision of this textbook. Time and time again, lack of widespread, accessible training and resources are cited as a barrier for the accelerated development of natural refrigerants globally. That is why I am so excited that this incredible textbook is now also available in English to support the transition to a cleaner, more sustainable future for all."

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# IIR calls for abstracts for International Congress of Refrigeration

Event, to be held in 2023, is organised under the theme, “Towards efficient, controlled and smart refrigeration”

By CCME Content Team

**T**HE International Institute of Refrigeration (IIR) called for abstracts for the 26th IIR International Congress of Refrigeration (ICR 2023), which will take place from August 21 to 25, 2023 in Paris.

Making the call through a Press release, IIR said delegates are invited to submit abstracts (up to 250 words) by June 29, 2022, via the Congress website ([icr2023.org](http://icr2023.org)).

According to IIR, abstracts are welcome under 10 key themes (IIR Commissions), encompassing all fields of refrigeration:

- A1 - Cryophysics & cryoengineering
- A2 - Liquefaction & separation of gases
- B1 - Thermodynamics & transfer processes
- B2 - Refrigerating equipment
- C1 - Cryobiology, cryomedicine & health products
- C2 - Food science & engineering
- D1 - Refrigerated storage
- D2 - Refrigerated transport
- E1 - Air conditioning
- E2 - Heat pumps & energy recovery

IIR said ICR 2023 will reunite key international stakeholders and provide

perspectives on the future of the industry in line with UN Sustainable Development Goals.

Organised by the French Association of Refrigeration (AFF), ICR 2023 will be held under the theme, “Towards efficient, controlled and smart refrigeration”, and will aim to explore how the industry can continue to build refrigeration with a positive impact, IIR said.

First held in 1908, ICR is a flagship event that converges industry and research, IIR said. Covering all fields of refrigeration, the IIR Congress, which takes place every four years, is the world’s largest gathering of scientists, experts, technicians and professionals in the field of refrigeration and air conditioning, it said. The event, it added, provides a unique forum to present and disseminate the results of research, development and innovation.

# Camfil invests MYR 50m in Malaysia

Says it is expanding manufacturing to meet global demand

By CCME Content Team

**C**AMFIL Malaysia (Ipoh) said land it acquired in Malaysia is the base for a new plant expansion. Making the announcement through a Press release, the company said it is one of the latest investments that further increases its capacity and manufacturing footprint to meet global demand in air filter products and services. The plant will be operational by Q4 in 2022, the company added.

The total land size of the plant will increase to 759,000 square feet, Camfil said, adding that the plant will enable it to meet the growing demand for air filters (particulate and molecular), not only in the Asia-Pacific region but also globally.

The plant expansion will be adjacent to the existing Camfil plant, including a

hi-tech R&D facility as well as a state-of-the-art High Efficiency Particulate Air (HEPA) filter, Turbo Machinery and Molecular Filter manufacturing, Camfil said. The plant will continue to produce more energy-saving air filters and provide clean air solutions aligned to the United Nations Sustainable Development Goals (UNSDGs), the company said.

Camfil said it has pledged the manufacturing strategy to support the UNSDGs, ensuring a meaningful contribution to sustainability globally. The four goals that have been identified as the most relevant to its business are Goal 3, good health and wellbeing; Goal 8, decent work and economic growth; Goal 11, sustainable cities and communities; and Goal 12, responsible

consumption and production, the company said.

“The MYR 50 million investment for the new plant expansion allows us to accelerate our growth strategy and broaden our offerings in APAC as we focus on delivering long-term value to our customers.” said Teng Kim Ming, VP Finance & IT (APAC), Camfil Malaysia.

According to Camfil, the new integrated facility will run into multiple production lines, including HEPA filter and molecular contamination control filters. Together, with the plant expansion, deployment of modern manufacturing techniques and many other sustainable features, Camfil will be able to cater to the increased demand of air filters in the APAC region, the company said. “The new expansion will give us additional warehouse space,” said Karunakaran Krishnan, Head of Plant & VP Supply Chain (APAC), Camfil Malaysia. “I foresee that we will have a reduction of approximately 50% in lead time.”

## AAF gets new COO for EEMEA, CIS, SAARC countries

Shailesh Nigam takes office with a mandate to lead key management and cross-functional operations, including acquisitions, reconditioning, logistics, sales-support, customer experience and growth operations, company says

By CCME Content Team

**A**IR filter manufacturing company, AAF International, headquartered in Louisville, Kentucky, in the United States, and a part of the Daikin Group, appointed Shailesh Nigam as Chief Operating Officer for EEMEA, CIS & SAARC countries, effective January 2022, the company said through a Press release.

According to the company, Shailesh has been working with AAF India since July 2020, overseeing India, Sri Lanka and eastern Africa operations. He developed a comprehensive operation and logistics strategy and led improvements through advanced analytics, processes, and systems, the company said. Shailesh has a total experience of 30 years, including 10 in the Middle East. A mechanical engineer and a marketing management postgraduate, his core experience has been in HVAC sales and marketing, the company said, elaborating that he has worked with Trane, Blue Star, McQuay and Fedders Lloyd.

As COO, Nigam will report to Daikin Japan Headquarter (Filter Division), the company said. He will lead key management and cross-functional operations, including acquisitions, reconditioning, logistics, sales-support, customer experience and growth operations, and shall be responsible for taking AAF to the next level in the region, the company said.

Filter Division Japan said, "Shailesh is a transformational leader and proven change agent with deep experience in operations and logistics management, as an innovative and seasoned executive who relies on data and analytics to drive execution. We are confident Shailesh will be a tremendous asset as we continue to manage organisational growth, scale our operations, execute our strategic plan and pursue our path to profitability. We are delighted to welcome Shailesh Nigam to the board."

Nigam said, "I am excited to take



Shailesh Nigam

up the new role as COO and look forward to using my experience in operations management and business transformation to help AAF build on its success, execute its growth plan and drive operational improvements across the organization."



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# ASHRAE issues call for abstracts for 2023 HVAC Cold Climate Conference

Submission deadline is June 13, Society says

By CCME Content Team

**A**SHRAE issued a call for abstracts for the ASHRAE and SCANVAC HVAC Cold Climate Conference 2023, to be held from March 6 to 8, 2023, in Anchorage, Alaska, in the United States.

Making the announcement through a Press release, ASHRAE said the conference will address unique challenges and solutions for climate change in cold and Arctic communities.

“Net-zero energy and sustainability goals pose special challenges for cold climates, climates with large swings in temperature and where shifting weather patterns result in colder temperatures in areas where winters are typically mild,” said Erich Binder, Chair, HVAC Cold Climate Conference 2023. “Harmonizing human comfort with the climatic realities of these environments is a balancing act, and strategic design is key to building, commissioning and operating efficient and long-lasting cold-climate structures.”

According to ASHRAE, the conference

seeks papers focused on the following topics and subtopics:

## Innovation in Equipment and Application

- Impacts of Data Centres Bitcoin Mining on Cold Climates
- Industrial Energy and Resource Development
- Utilities and Infrastructure
- District Heating and Cooling
- Heat Pumps/Heat Recovery

## Sustainability and Resiliency

- Smart Buildings
- Energy Conservation
- Thermal Storage
- Decarbonisation
- Overheating/Climate Models
- Maintenance and Operations

## Building Environments

- Indoor Environmental Quality
- Critical Environments/Airborne Virus Transmission/Cross Contamination
- Building Envelope

- Humidity Impacts on Building Envelope
- Occupant Comfort
- Residential, Commercial, Institutional, Manufacturing
- Healthcare, Assisted Living, Senior Residences, Elder Care Home, Senior Housing Retirement Homes
- Digitalisation and Controls
- Unique Locations, Underground Spaces, Walkways, Shopping Centres
- Sports Facilities

According to ASHRAE, abstracts should be 300 words or less and should concisely present the problem statement, the novelty of the work, the methodology, the impact and applicability in cold climates, and the findings. Abstract submissions are due June 13, 2022, ASHRAE said, adding that if accepted, final conference papers, running to a maximum of eight pages, are due on October 31, 2022.

ASHRAE said that those interested in submitting could visit [ashrae.org/2023hvaccoldclimate](http://ashrae.org/2023hvaccoldclimate) to access more information.

## MARKETPLACE

# Giwee launches GCHV 200Pa medium ESP ducted unit

The unit has built-in EXV and optional built-in water pump, company says

By CCME Content Team

**G**IWEE, a subsidiary of Carrier, has launched the GCHV 200Pa Medium ESP Ducted unit.

Making the announcement through a Press release, the company said the brand-new DFC (design for comfort) unit achieves a maximum static pressure of 200 Pa with built-in EXV and E-box design, and optional built-in water pump.

Giwee said the unit offers the flexibility of easily switching the air

return from the bottom or from the rear, according to the specific needs of the project. The company further said the unit allows for constant air volume or constant fan speed to be set by means of a wired controller or remote controller.

According to Giwee, the reserve fresh air outlet in the unit can provide fresh air to the built-environment at any time, and that the easy-to-remove filter and fan are convenient for cleaning. Further, the EXV coil and water level switch access port in the



unit make maintenance easier, the company said.

Giwee said the units are compatible for E-heater, UVC sterilisation and Wi-Fi-based operations.

# {Quoteyard}

We bring you a collection of some of the most interesting quotes, extracted from articles in this issue. In case you missed reading, we recommend you flip back to take full advantage of the insights and remarks, in the context in which they have been presented.



Half of the buildings standing in 2060 have not yet been built. There are 3.6 billion cooling units in use today. By 2050, that number is expected to be 9.5 billion. If left unchecked, emissions from cooling appliances are expected to double by 2030. ”

p4



With mammoths like smartphone, telecom and automobile manufacturers in line, the HVAC industry isn't on the priority list, and manufacturing delays can be expected to last through the year and possibly well into 2023. ”

p8



Collaboration between regulators and the HVACR industry can ensure targets are met. This collaboration can also consider past GCC region experience, assessing what worked and what needs changing, and what successful energy efficiency strategies have regulators and the industry in Europe or North America implemented since the early 1990s.

p10



But I still find to my dismay that AC specs in commercial villa compounds are bereft of any controls. Typically, the project ends up with an air conditioning system that cannot be hooked on to an app-based controls system

p21



I recall visiting an air-handling unit in a shopping mall, some years ago. The scenery was familiar: Collapsed air filters, primary filters washed to the point of destruction... and a pigeon's feather trapped on the cooling coil. I wondered that if a pigeon's feather is found on a cooling coil, what would stop microorganisms from invading the HVAC system and using it as a vehicle to transport themselves in the indoor environment?

p13



Moreover, if an ESCO would now be engaged into an SSEPC project, the customer's initial investment would be reduced to zero, as would be the maintenance costs (since they are taken care of by the ESCO).

p17



Before COVID-19, there was a tradeoff between energy efficiency and human health. As we solve the pandemic issue, we must continue our focus on how IAQ affects human health and productivity.

p31

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