

# climate control MIDDLE EAST

KEY PERSPECTIVES ON THE REGION'S HVACR INDUSTRY

June 2022

## GUEST COLUMNS

### LIQUIDATED DAMAGES

Euan Lloyd

### ON LAYOFFS

Alissa Paillé

### VALUE CHAIN ECONOMICS

Krishnan Unni Madathil

## Q&A

### RACHID ASSEBBANE, BITZER

VFDs

### MEINY PRINS, PRIVA

IAQ & building tracing

### STEVE LEMOINE, DALKIA

Fighting the climate challenge

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## CHILL

Supplement on CHW systems

ITALY SUPPLEMENT

PERSPECTIVE  
IAQ AND MONITORING  
Sam Molyneux, Poppy

# FINDING A SIXTH GEAR

THE STATE OF DISTRICT COOLING IN THE GCC REGION



Empower wins gold twice over at IDEA 2022

Eurovent ME announces HVACR Next Generation event

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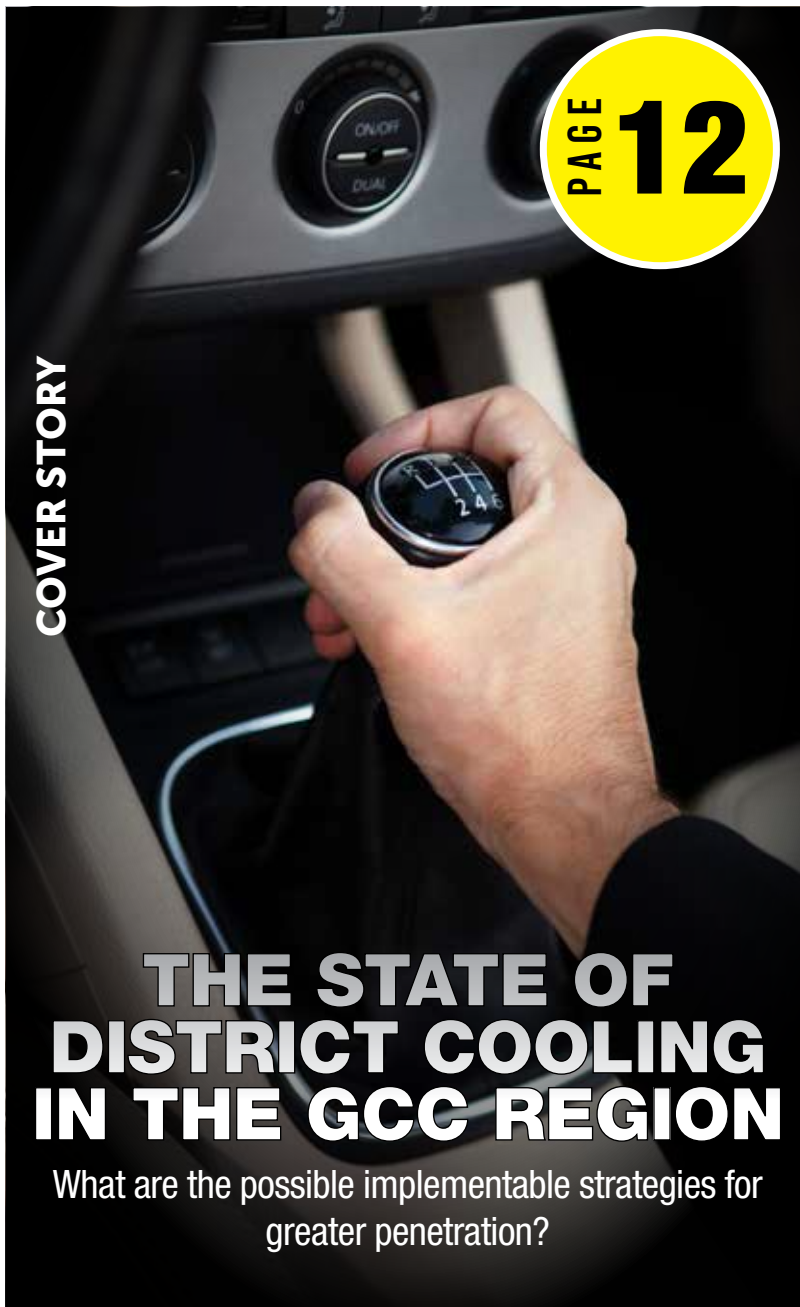
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**Surendar Balakrishnan**  
Editor  
@BSurendar\_HVACR



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# Standing their ground

**W**HILST it is common knowledge that pricing has come to be the single biggest factor in purchasing HVACR equipment and components in the last five years, the extent of the problem faced by well-meaning manufacturers and suppliers makes for stark reading.

The topic is worth discussing, because meeting socio-economic and sustainable development targets, including emission reduction, is not only about infusing technological innovation, and ensuring proper design, installation and O&M but is also about pricing and general trading dynamics, and their impact on companies earnest about focusing on quality.

The market is dotted with manufacturers with decades of presence, which includes R&D, rigorous manufacturing processes and other cost-intensive layers. Today, many of them feel upended by “newbies”, some less than a year old in the market, with a mere 1-2 certifications in their kitty, and yet confidently offering prices 50-60% less than the market standard and, to make matters worse, five-year warranties; in some disconcerting instances, they are even offering 10-year warranties.

With the speed of projects having declined, in addition to fewer big projects, the challenge is even more so for long-standing manufacturers, who focus on quality, robustness and strong aftermarket services.

They blame the clients for the situation they find themselves in and question the disappearance of customer loyalty. They look around and find that everything is commoditised and that many clients are happy to compromise on quality for even as few as USD 100 of price difference. This thinking, they say, percolates from the client to the consultant and the contractor. And soon it becomes a transformative eco-system.

Perhaps nothing could be more symptomatic than the increasing use of the word, ‘equivalent’ by consultants while specifying products. And this word side-lines established players from the market with potent force, on the back of their sales engineers helplessly filing ‘lost-order reports’ with frightening frequency.

All is not lost, though, with some manufacturers acknowledging that the price clients are asking is impractical, and putting up a fight to preserve or to capture lost market share. They are launching and sustaining concerted efforts to educate the marketplace, highlighting such issues as the high percentage of deterioration of equipment output in unrealistically low-priced products and, at the same time, showcasing the advantages of equipment, which encompass high-quality motors, shafts, bearings and belts – the sum of all the parts.

The fight they are waging is no longer only over pricing – and in some case no longer over pricing; instead, they are highlighting technical competence and pushing time-tested aftersales service features to the foreground.

They know they are in it for the long haul and are not willing to concede the hard-won space.

**climate control** MIDDLE EAST  
KEY PERSPECTIVES ON THE REGION'S HVACR INDUSTRY

**Co-Founder & Editorial Director**  
Surendar Balakrishnan  
[surendar@cpi-industry.com](mailto:surendar@cpi-industry.com)

**Editor**  
Surendar Balakrishnan  
[surendar@cpi-industry.com](mailto:surendar@cpi-industry.com)

**Features Writer**  
Nafeesa Mohammed  
[nafeesa@cpi-industry.com](mailto:nafeesa@cpi-industry.com)

**Online Writer**  
Ranjana Maria Konatt  
[ranjana@cpi-industry.com](mailto:ranjana@cpi-industry.com)

**Advertising Enquiries**  
Frédéric Paillé  
+971 50 7147204  
[fred@cpi-industry.com](mailto:fred@cpi-industry.com)

**Sayf Camran**  
Advertising Manager (Europe)  
[sayf@cpi-industry.com](mailto:sayf@cpi-industry.com)

**Founder, CPI Media Group**  
Dominic De Sousa (1959-2015)

**Co-Founder & Commercial Director**  
Frédéric Paillé  
[fred@cpi-industry.com](mailto:fred@cpi-industry.com)

**In Asia (except India), contact:**  
Judy Wang  
Our representative in Asia  
T: 00852-30780826  
E: [judywang2000@vip.126.com](mailto:judywang2000@vip.126.com)

**Design**  
Iftaqar Ahmed Syed  
[syed@cpi-industry.com](mailto:syed@cpi-industry.com)

**Webmaster**  
Chris Lopez  
[chris@cpi-industry.com](mailto:chris@cpi-industry.com)

**Database/Subscriptions Manager**  
Purwanti Srirejeki  
[purwanti@cpi-industry.com](mailto:purwanti@cpi-industry.com)

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*



**Nabil Shahin**  
*International Technical Director – AHRI MENA, writes on regulation-related issues impacting multiple stakeholders in the building construction industry*



**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. Chartered Accountants, carrying out an analysis of the market, writes on business opportunities for the HVACR industry*



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



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



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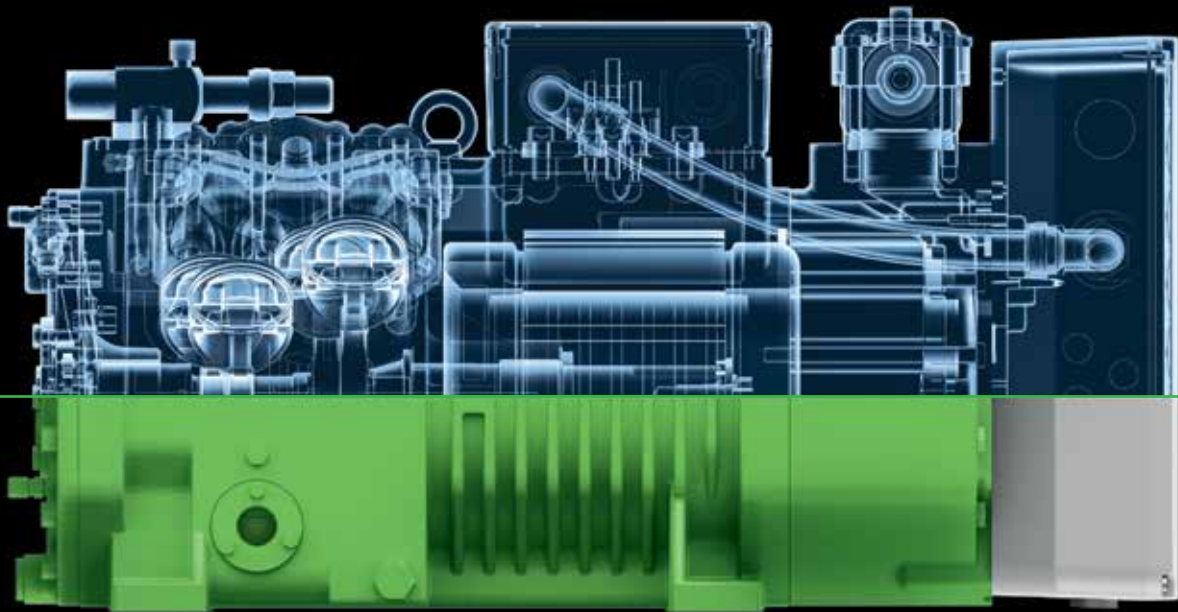
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# MACRO-ECONOMIC ANALYSIS:

READING BETWEEN THE LINES with Krishnan Unni Madathil

## IT IS HAPPENING. WHAT NOW?

The way value chain economics works implies that pervasive increases in costs will automatically lead to a pervasive decline in demand for the goods produced, says **Krishnan Unni Madathil**



**Krishnan Unni Madathil**  
Auditor, Bin Khadim, Radha & Co Chartered Accountants, writes a bi-monthly macro-analysis on geopolitics, incumbent political structures, global business and finance exclusively for *Climate Control Middle East*. He may be contacted at [krishnan.madathil@binkhadimradha.com](mailto:krishnan.madathil@binkhadimradha.com).

**I**t must not be news to us anymore that we stand at a precipice. Most reasonable commentators and experts are forecasting a wave of recession to sweep across the globe in a few months from now. There is little to suggest that this wave will leave the UAE or the wider GCC region unscathed. It behooves us to understand the factors that have led to this situation, only so we may be best equipped to navigate through the incoming rough waters.

It does not need much retelling that costs have gone up. Everything from grocery items to fuel costs, and from housing to your weekend family restaurant meal has gone up, and one would have had to be comatose through this entire stretch to not sense it.

Purchasing managers across the board have noticed the wave of price rises of raw materials and input costs. Those who source their inputs from China have been hit especially hard, and the rapidity of the supply shock has caught many of them by surprise. Increases in raw materials and input costs may be transferred wholesale to the customer, but there may be resistance to this from the customers concerned, which while they may perhaps be unable to react to immediately, they will definitely move

away from in a few months' time. The way value chain economics works implies that pervasive increases in costs will automatically lead to a pervasive decline in demand for the goods produced.

For business managers, this is a time of especial concern as they figure out ways to continue to maintain their profitability and efficiency while causing as less worry as possible to their customers and their own staff. It is natural at this stage for HR costs to be on top of everyone's minds. Pay rises may meet a glass ceiling or a temporary moratorium despite significant pressure from below. After two years of remote working and the concomitant haircuts in salary, it may be a time when these temporary haircuts assume more permanent forms. From an employee's perspective, salary incomes not keeping up with rising consumption expenditure would naturally put pressure on said expenditure as well as savings. Runaway inflation will also have a deleterious impact on existing cash savings, forcing people to reconsider their savings and investments choices.

The choices to be made by business managers may not entirely depend on the position of their own business and their own previous performance leading up to this time. Even the most efficient

businesses in a sector, such as the HVACR sector, may be forced to raise prices simply because everyone else is doing so.

Unlike several other countries, the UAE has managed to weather through the continuous barrage of adversities over the last couple of years with elan, and has come out the other end with a lot to be justifiably proud of. The chief reason for this is the endless reserves of pragmatism shown by the leadership of the UAE, which has managed to cultivate friendships with one and all international partners, not bending unduly to pressure from certain parties to disavow partnerships with certain others, even as the country continues to discontinue problematic relationships with dignity and self-assuredness. The UAE realises, more than most others, that pragmatism is what got the country from 1971 to 2021; and it knows that it will have to dig even further deep into its wells of pragmatism to take the country from 2021 to 2071.

But for a few tepid surprises, it is a foregone conclusion that the wave of inflation affecting the world will eventually affect the real estate sector in the UAE, as well; as will it affect allied sectors, such as HVACR and Facilities Management.

Clever businesses usually utilise these situations to reconsider their business models and adopt various strategies to tide over the crisis with as little damage as possible. From tactical changes in payroll expenses to headcount management and to office space transfers, at the strategic level, businesses may carefully consider their portfolio of offerings, and rank each segment or activity on an acceptable basis, such as profitability, growth potential and historical performance. Following this, the activities or segments that score the lowest will be marked for winding down.

In parallel, clever businesses will also look for ways to diversify their offerings into new, more promising activities, service offerings as well as markets to offset the losses sustained when getting rid of the old and underperforming entities. It should be noted that the ongoing supply shocks in commodities, such as oil, where

you had Brent Crude trading at multi-year highs of over USD 150 per barrel at times during this year, has led to significant economic rents being gained by oil producers such as Saudi Arabia and the UAE, which has meant that the projects market underway in these countries will continue to chug along for the foreseeable future. However, the longevity of this windfall is suspect. Business planners would be cautioned to proceed with utmost care and maximum flexibility in terms of contract arrangements.

One difference with the current wave of troubles is that borrowing rates will finally go up after a period of almost 15 years of continuously depressed rates, making the financing of projects much more expensive. Much of this is being driven by decisions of the US Federal Reserve in the face of runaway inflation in that country. Since the UAE Dirham is pegged to the US Dollar, the Central Bank of the UAE has little option but to

mimic the interest rate policy of the US Federal Reserve. And the US Federal Reserve is planning up to eight separate increases of the borrowing rate by 50 basis points (100 basis points is one per cent) each time through 2022 and 2023. The "Finance Cost" section of your company's income statement will begin to balloon this year, unsurprisingly. Since the base rate charged by the UAE Central Bank is a given, it behooves finance managers to manage their companies' funding requirements with deftness and flexibility so that these costs are minimised.

If times get too hard, just remember that you are not alone in this. Everyone is going through a similar time. [ccme](#)

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# COMPLETION AND TAKE-OVER

Here are a few aspects for sub-contractors to consider, to avoid the prospect of delay and the spectre of liquidated damages...

**C**OMPLETION of the scope of works is obviously a key objective of all sub-contractors. On account of hidden risks, however, this can be difficult to achieve, while various red-flag issues may remain, following take-over.

In this article, we, therefore, shall look at some key pitfalls for sub-contractors to consider in the context of take-over as well as during the defects liability period (DLP).

## CONSTRUCTION PERIOD

Before the issue of take-over becomes relevant, the sub-contractor clearly needs to successfully complete its scope of sub-contract work. However, this can be a challenging process, in respect of which various onerous contractual provisions can significantly impact the unwary. For example, the sub-contractor's scope may not be well, or exhaustively, defined, and/or may vaguely cross-refer to the main contractor's scope under the main contract.

An ambiguously defined scope of sub-contractor works is dangerous; this can lead to 'scope creep', meaning that the sub-contract can be construed to impose additional works than the sub-contractor envisaged – and duly tendered – for the same fixed contract price and time for completion. The ramifications of this can be significant; the subcontractor's profit margin can be severely diminished while performing additional and unanticipated works, which obviously take time. This, therefore, brings into play the prospect of delay and the spectre of liquidated damages.

Payment issues constitute a further challenge that sub-contractors frequently face. All too frequently, main contractors

in the market are experiencing cash-flow difficulties that prevent them from making timely payments to their sub-contractors. Further, unless an express assignment has occurred – which is very seldom the case – a sub-contractor has no legal basis to directly approach the employer for payment.

When a main contractor has competing financial commitments, the issue of priorities inevitably arises, and it is, therefore, important that the sub-contractor has sufficient leverage to secure payment ahead of other creditors. This can be achieved by ensuring that the sub-contractor has included an express right to suspend performance in the event of non-payment.

The prospect of suspension can constitute a powerful incentive to make payment, as the main contractor's works will be delayed, thus exposing the main contractor to liability under the main contract, if the sub-contractor ceases to perform. Additionally, the employer may, for the good of the project, be willing to make direct payments to sub-contractors, if the main contractor's non-payment has triggered the sub-contractor's right of suspension.

While suspension rights exist at law, it can be arguable as to when such suspension rights can be properly exercised, and the main contractor may allege that rather than legitimately suspending performance, the sub-contractor has actually abandoned the sub-contractor works, thus 'turning the tables' on the sub-contractor and exposing the sub-contractor to significant risk.

Pay-when-paid payment mechanisms – that is, the sub-contractor is only entitled to payment once the employer has paid the main contractor for the



**Euan Lloyd**

Senior Counsel, Al Tamimi & Company, writes a bi-monthly column on legal issues relating to building construction, exclusively for *Climate Control Middle East*. He may be contacted at [E.Lloyd@tamimi.com](mailto:E.Lloyd@tamimi.com)

sub-contractor's works – are a further difficulty, and such clauses are often insisted upon by main contractors. Notwithstanding the often compulsory nature of pay-when-paid clauses, it can be possible to include drafting that mitigates the potential harshness of such payment mechanisms. Such safeguards may include requiring the main contractor to substantiate the position regarding payments under the main contract and demonstrating the actions that the main contractor has deployed to recover payment.

Further approaches may be to seek to implement certain thresholds that apply to the pay-when-paid mechanism. For example, it could be commercially agreed that payments of less than a certain amount will fall outside of a pay-when-paid mechanism or that of the pay-when-paid structure, if subject to a longstop date. In other words, it could be agreed that outstanding payments shall become due, even if they have not been received by the main contractor by a certain date.

## TAKE-OVER AND DLP

Even though the sub-contractor may have adequately completed its designated scope of sub-contractor works, this may be insufficient for the sub-contract works to be formally accepted and for a taking-over certificate



to be duly issued. Indeed, it is not unusual for the sub-contract to provide that the sub-contract works shall only be deemed to have been completed upon acceptance by the employer. In practice, this means that the sub-contract works will not be accepted until the main contract works have been taken over by the employer under the main contract.

Given that it is likely that the main contractor's scope will take longer – sometimes significantly – to complete than that of a sub-contractor's scope, the sub-contractor may well be left in a 'state of limbo' for quite some time. This situation will be exacerbated and complicated if disputes that may well have nothing to do with the sub-contractor arise between the employer and the main contractor. Issues that flow from this situation can include the need for the sub-contractor to maintain in place its performance security as well as as possibly its insurance policies until its

works have formally been taken over.

Extending performance security and insurance policies can have a meaningful cost consequence. Additional concerns are that the return of any retention is likely to be delayed while manpower and resources may need to be deployed in maintaining the sub-contract works until the works have been finally taken over.

Once a project has been taken over, it becomes a revenue-generating asset, and the DLP commences. Defects identified at take-over should be set out in the taking-over certificate together with a reasonable timeframe within which such defects in the sub-contractor works are to be remedied.

It is important that the timeframe within which defects are to be corrected is achievable, as the main contractor will typically reserve the express right to correct defects at the sub-contractor's cost, if the sub-contractor fails to do so within the designated time.

Further red-flags include: (a) Sub-contract DLPs that run concurrently with the DLP under the main contractor, in respect of which the aforementioned comments regarding taking over refer to; and (b) 'Replenishing' DLPs that are not subject to a long-stop date – that is, the concept that the DLP starts again, in respect of any defects rectified during the DLP.

### CONCLUDING COMMENTS

While sub-contracts can be difficult to negotiate, it is nevertheless important that sub-contractors identify key 'red-flag' issues, such as the ones identified in this article and ensure that adequate mitigants are in place. [ccme](#)

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## WHAT AFTER A LAYOFF?

One of the most traumatic experiences for a professional engineer is of being let go from work. What is the way forward in the circumstances?



**T**HE trauma of being laid off is the stuff of nightmares, be it afflicting those that are in junior positions or those in high or senior positions. We saw several instances of this even during pre-pandemic days; COVID-19 only made matters worse.

So, where should one go after having been laid off? What is the way out of the morass?

The challenges are multi-fold for those in senior positions. It is quite true that those in high positions find it difficult to land the right package – or anything close to what they have been used to.

If you find yourself in this position, what is the way forward? Well, there are two possibilities – work with a lower package or work on your own, as a consultant.

It is not attractive to draw a lower salary, but given the circumstances, it is wise to bide one's time and remain vigilant of an opportunity that could propel the career to its previous status. Again, working as an independent consultant is fraught with risks and uncertainty, but the right proportion of resourcefulness and diligence could lead to a lucrative destination.

Now, if you are among the lucky



Alissa Paillé is the Founder and CEO of careersbay.com, a headhunting and recruitment agency specialising in the HVACR industry. She writes an exclusive bi-monthly column for *Climate Control Middle East*, and can be reached at [alissa@careersbay.com](mailto:alissa@careersbay.com).

few that have not been laid off, there is a lesson to be learnt from the swirling circumstances. Indeed, they teach us to be more prepared to make the next move, even if in a top position. They teach us not to be complacent and to upskill ourselves at all times. The organisation you are working for must have hired you for the right reasons – that you offer value through your experience and your skills, and your ability to evolve. As a career consultant, I do believe 100% that old is still gold. Your years of experience, knowledge and skills are valuable for a lifetime. **ccme**

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# CHILL

TRACKING THE DISTRICT COOLING INDUSTRY IN THE MIDDLE EAST



'Dubai can increase rate of penetration from 21% to 60% without adding a single chiller'  
**George Berbari**, CEO, DC PRO Engineering

**DALKIA** speaks on fighting the climate challenge

**Dan Mizesko**: Harvesting energy from CHW plant hydronic loops

**Market Feature:** Heat exchangers



# ‘FROM 21% TO 60%

## WITHOUT ADDING A SINGLE CHILLER’

Dubai can increase District Cooling penetration with ease, says George Berbari, CEO, DC PRO Engineering, outlining clear-cut implementable strategies for greater growth of the industry. Excerpts from the interview he gave to **Surendar Balakrishnan** of *Climate Control Middle East*...

### What is the market size of District Cooling in the GCC region?

The population is increasing, and power is increasing per capita. The GCC region is becoming a substantial player in terms of capacity.

### What progress has the District Cooling market made in the GCC region in terms of penetration?

Penetration of District Cooling in the GCC region probably did increase marginally in the last seven years, though we have seen an increase in capacity. In 2008, the rate of penetration was 3.3%. In 2012, it was 5.1%, and in 2021, it was seven per cent. So, it is moving up but has not reached a substantial penetration rate, or anywhere near its full potential, which in my opinion is 60-80%.

The biggest benefit of District Cooling is its ability to store thermal energy in an effective manner. Energy storage in the GCC region and the rest of the world is a growing challenge with the continuous increase of intermittent renewable energy, where fluctuation in the load is to be absorbed by thermal energy storage, helping to stabilise the electric grid.

The governments here know the challenges are rising. Renewable energy is yet a small portion of the energy mix in the GCC region, but it is increasing. If by 2050, we will exceed 50% of our

energy use as renewable energy in the overall mix, then we must be ready for that and rely on several energy storage approaches, such as grid-scale batteries, reverse water pumping and, above all, thermal energy storage.

If the GCC region countries increase District Cooling penetration to 50%, only then will they benefit from thermal energy storage. And additionally, they would need to change the design of thermal energy storage to integrate it with renewable energy. The Excel sheets I am sharing constitute one of the best stories on District Cooling. The numbers tell a significant story. In 2012, the population in the GCC region was 47.43 million; in 2021, it rose to 60.40 million. Peak electric load in 2012 was 97,536 MW; in 2021, it was 144,098 MW – you are talking of a 47.7% increase, while the population went up only by 27.4%. The peak electric load per capita has risen from 2.06 kW in 2012 to 2.39 kW in 2021, so the consumption per capita is increasing.

All said, we cannot lump together the District Cooling performance in the GCC region. And then, we would have to even consider intra-country. As per my calculation, if you look at Dubai, the penetration of District Cooling is 21%. If you consider the whole of the UAE, the penetration drops down to 15%. But

it is still higher than Kuwait (4.4%) and Bahrain (5%). The lowest penetration rate of District Cooling is in Oman and Saudi Arabia. So, we have four countries, where the penetration is around the five per cent mark. Qatar is comparable in penetration to the UAE, though, at 17.4%. But overall, we do see a big discrepancy in progress. As I said, numbers do talk.

### How much is Dubai on track to improve penetration of District Cooling and get a bigger share?

Dubai can increase penetration from 21% to 60% without adding a single chiller. The emirate just needs to expand its chilled water networks and install thermal energy storage capacity. They are still designating certain areas that must be served by District Cooling.

I believe Dubai can do much more to help District Cooling. You can increase penetration to 60%, and the cost of increasing the penetration is a fraction of what it has possibly paid till now.

District Cooling can be more competitive. The current idle capacity, which in my estimate is 50%, can be fully utilised. And to date, around 50% of District Cooling does not have thermal energy storage, so the emirate can increase thermal energy storage capacity and increase efficiency and integrate with solar energy in the future. ▶

## 2012 KEY GCC REGION COUNTRIES' ELECTRIC POWER & DISTRICT COOLING DATA

	KSA	UAE	Kuwait	Qatar	Oman	Bahrain	Total GCC
Estimated Population - Millions	28.29	9.21	3.25	2.05	3.31	1.32	47.43
Peak Electric load - MW	51,939	19,909	11,881	6,090	4,837	2,880	97,536
Peak Electric load - KW / Capita	1.84	2.16	3.66	2.97	1.46	2.18	2.06
Produced power Gwh / Year	2,40,288.0	1,08,884.4	62,560.0	34,788.0	25,017.3	14,120.0	4,85,657.7
Produced power kwh / kw	4,626.4	5,469.1	5,265.6	5,712.3	5,172.1	4,902.8	4,979.3
kWh / Capita / Year	8,494	11,822	19,249	16,970	7,558	10,697	10,239
Ton CO2 / Capita / Year							
Estimated Peak cooling Load - Ton	2,25,06,900	86,27,200	51,48,400	26,39,000	20,96,000	12,48,000	4,22,65,500
District Cooling Est. Peak Load - Ton	8,00,000	10,00,000	90,000	1,50,000	70,000	45,000	21,55,000
District Cooling Penetration Rate - %	3.6%	11.6%	1.7%	5.7%	3.3%	3.6%	5.1%

Table courtesy George Berbari, CEO, DC PRO Engineering

2019/2020 KEY GCC REGION COUNTRIES' ELECTRIC POWER & DISTRICT COOLING DATA							
	KSA	UAE	Kuwait	Qatar	Oman	Bahrain	Total GCC
Estimated Population - Millions 2021	35.85	10.08	4.38	2.98	5.32	1.78	60.40
Peak Electric load - MW	79,667	30,000	14,960	8,600	7,111	3,760	1,44,098
Peak Electric load - KW / Capita	2.22	2.98	3.42	2.89	1.34	2.11	2.39
Produced power Gwh / Year	3,38,031.0	1,31,430.0	74,757.0	45,826.0	32,972.0	18,701.1	6,41,717.1
Produced power kwh / kw	4,243.0	4,381.0	4,997.1	5,328.6	4,636.8	4,974.0	4,453.3
kWh / Capita / Year	9,430	13,036	17,068	15,378	6,193	10,483	10,625
Estimated Peak cooling Load - Ton	3,18,66,800	1,20,00,000	68,20,000	34,40,000	28,44,400	15,03,900	5,84,75,100
District Cooling / Large Central Plant Est. Peak Load - Ton	12,00,000	18,00,000	3,00,000	6,00,000	90,000	75,000	40,65,000
District Cooling Large Central Plant Penetration Rate - %	3.8%	15.0%	4.4%	17.4%	3.2%	5.0%	7.0%

Table courtesy George Barbari, CEO, DC PRO Engineering

## Are District Cooling utilities offering greater benefits to customers than before?

In some areas, yes... they are more friendly to customers. In terms of Low Delta T Syndrome, they are trying to explain to customers and give them a grace period. Also, some of them want to reduce the connected load and are instead levying a one-time charge. They are also trying to help in reducing energy.

Electric utilities have a different approach to District Cooling amongst themselves. As of now, Abu Dhabi charges 20 fils/kWh for District Cooling; for unitary products, it is 30 fils/kWh. In Dubai, it is 23 fils/kWh for unitary products and 38 fils/kWh for central cooling and District Cooling schemes, excluding the fuel surcharge. We are seeing similar slab rates in Saudi Arabia, Oman and Qatar, as in Dubai. In Kuwait, it is 2 fils/kWh, which is because they have substantial subsidies in place.

## Are we starting to see the benefits of RSB Dubai's (Regulatory Supervisory Bureau) new regulations?

As of now, I have not seen any of the District Cooling utilities mentioning the regulation, perhaps because it is early days. As of now, they seem less concerned about regulation, but that does not change the perception of

end-users, who seems to be avoiding properties with District Cooling in them.

We recently heard the good news that the DED (Dubai Economic Department) is trying to make real estate more competitive, and one question that shot up was District Cooling charges.

## What is the progress with the consolidation of District Cooling entities in the region? You had earlier written on consolidation. Are we beginning to see the benefits of consolidation?

In my view, when a transformed entity emerges because of the consolidation, it wants to recover its investment; and so, there is more pressure on pricing. Indeed, this seems to be putting pressure on District Cooling companies to increase rates rather than decrease them, because they are buying at a premium. There are instances where they are buying at 2-3 times the book value. So, in my view, consolidation seems to be counterproductive as of now.

## You have always spoken of the need for more innovation in District Cooling? Are we seeing an improvement?

One aspect that is affecting District Cooling across the board is the lack of enough instances of integrating automation. All the companies working

in automation are suffering – owing to regional and global cyclical and geopolitical trends – and are not able to financially sustain themselves, and I believe the region is perhaps losing its expertise because of that. The automation companies should have been busy improving plants with AI, but unfortunately, they don't have sufficient business to sustain themselves. Broadly speaking, all contracting works in the GCC region are becoming highly competitive, and contractors and engineering consultants are suffering.

There was a time when you had 100s of electro-mechanical contractors, but now very few are surviving. Very few are financially and technically healthy. And from a District Cooling perspective, there are no more than five or six contractors that are still standing; among them, not all are financially healthy. So, if you don't have engineering, the fees are dropping, and you see consultants are working in other countries. In short, you don't see automation integrators being able to survive here. After the acquisitions, one way to improve profit is to reduce costs, but copper and steel prices have gone up, so there is more pressure on contractors to reduce costs. So, we need a very strong re-evaluation of the ground realities. And as a consultant, I wish I was made of copper. [ccmc](#)



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# WHAT THE HEX?

Heat exchangers market to see over seven per cent annual growth while companies reset their goals to offer environmentally friendly components and technologies, says **Nafeesa Mohammed**

**T**HE demand for heat exchangers, like almost every other sector, suffered a blow during the COVID-19 pandemic. But following the pandemic, the market is expected to have a growth rate, as various industries move towards achieving greater energy efficiency and renewable targets.

Sunand Mohan, Director of Energy Division, Alfa Laval, is a flagbearer of optimism. “According to the Fortune Business Insight, the global heat exchangers market is projected to

reach USD 28.30 billion in 2028 at a CAGR of 7.3% during the 2021-2028 period,” he says. “This growth is predominantly driven by expanding industrial spaces, such as petroleum refineries, petrochemical production units, District Cooling, power generation plants and food manufacturing industries. Meanwhile, there is an increasing focus on energy efficiency, with innovations such as waste heat-capture helping this trend.”

As for GCC region countries,

they are driving the demand for heat exchangers with District Cooling-related requirements, and this trend is expected to continue contributing to demand growth. Echoing this, Jibin Mohanan, Sales Manager, HEX MEA, Gulf Sondex FZCO, says, “Demand for thermal heat transfer is increasing due to the surge in energy efficiency needs and also the higher demand for cooling, heating and energy consumption in the buildings, wastewater treatment and food supply caused by the rising urban population.”





productivity while providing quality products; more recently, they've also begun to tie those goals with more socially and environmentally conscious ones. In many instances, the realm of electrical cooling has proven an important area to focus on when it comes to lowering a company's environmental footprint. In the GCC region, heat exchangers are being viewed with increasing urgency as a means to reducing carbon emission and as a means to saving energy and improving efficiency, requiring providers to innovate on technologies to enhance efficiency, lower energy consumption and bring down costs.

### MATERIALS AND INNOVATIONS

Innovations relating to materials has always been at the centre of enhancing cooling technologies. Recent studies have been exploring nanofluids as an option to improve the efficiency and profitability of thermal systems in industrial, commercial and residential applications. Mohan says, "When considering how best to meet the needs of synthetic and low-GWP refrigerants, there are three main types of plate heat exchanger technologies to focus on – copper-brazed plate heat exchangers, semi-welded plate heat exchangers and fusion-bonded plate heat exchangers." Meanwhile, plate design enhancement has been a focus for Danfoss. The company claims its new D-plate series has made significant upgrades to the traditional Fishbone plates to maximise performance by up to 10%.

Shell & tube heat exchanger is quite preferred across many application sectors. In the region, plate heat exchangers are highly deployed for cooling towers, boilers and the food and beverages industry.

The regional industry players feel that compared to alternative thermal technologies, plate heat exchangers provide greater heat transfer within a compact design and smaller footprint. Mohan says: "Plate HEX costs less in comparison to shell and tube in CAPEX and OPEX. Additionally, they are easy to install, reduce carbon footprint and are easier to expand upon demand." Citing an example, Mohan points to how a customer, who used shell &



Sunand Mohan

tube technology, opted for two plate heat exchangers. "This resulted in approximately 60% cost reduction and 95% installation cost reduction," he says. "Also, the plate heat exchangers they implemented weigh less, and the carbon footprint is drastically reduced."

Weighing in, Rennie Sequeira, General Manager, DC Serve Middle East, points to how heat exchangers in HVAC and District Cooling applications are particularly used as a pressure brake system to protect the system components, pipes and fittings from high system pressure. The reduce the risk of valves and ancillaries failing at high system pressure and also protect the cooling system from wear and tear, thus increasing the life of system. He adds that modern gasketed plate and frame heat exchanger designs have been able to accommodate system design pressure ratings of up to 32 bar and are tested at 41 bar.

### CUSTOMISING FOR BETTER PERFORMANCE

When it comes to heat transfer as a function, the consensus is that getting the most energy-efficient and reliable performance comes down to having the ideal technology for specific conditions. Different applications demand different designs, depending on conditions, temperatures and pressure, and the plate heat exchanger type. Sequeira says: "One has to take due consideration in selecting the dimensions (models) of heat exchangers by providing the recommended space for maintenance all around the heat exchanger, taking advantage of customisable nature of ▶

Mohan also notes that the most demand has come from Saudi Arabia and Egypt for both new and reinstituted projects. He believes the heat exchangers market is also seeing a positive impact of increasing oil prices and the increased use of District Energy, among other factors.

For companies in the HVCAR industry, some goals and initiatives have evolved significantly, post-pandemic. For example, companies have always sought to streamline costs and boost

heat exchanger, in terms of size, velocity across nozzles, a combination of plate patterns (chevron pattern) to achieve the optimum thermal efficiency, limitation of pressure drops across the heat exchangers, flow pattern and the number of passes.”

Mohan believes that heat exchangers increase energy efficiency by 20-30% when used optimally. “We have plate heat exchangers that save 54 TWh of energy refineries compared to what they would consume with less efficient, conventional heat exchangers,” he says. “As a result, the corresponding reduction in CO<sub>2</sub> emissions is over 13 million tonnes. Imagine if every refinery switched to more efficient, compact welded plate heat exchangers for all processes? It could reduce energy consumption by 23% and global carbon emissions by 245 million tonnes.”

While HVAC is more standardised and less complicated, heat exchangers for industrial applications need a tailored approach. Mohanan says that with an increase in industrial application, there is more and more need for custom-designed heat exchanger plates, because they have different varieties of fluids, design conditions, and product certification and quality needs.

### ENERGY EFFICIENCY AS DRIVING DEMAND

Mohan says that companies are increasingly realising that energy efficiency is the first step towards net-zero, and this is driving demand and innovation. There’s an increasing focus on clean energy with projects around green hydrogen, carbon capture, utilisation and storage. Zero-liquid discharge is an excellent opportunity in the GCC region, where water is a scarce resource, in addition to the huge potential offered by the circular economy space. The growing demand for sustainable energy development to mitigate GHG emissions is a valid one. “Our customers expect us to provide solutions that support them achieve no waste and carbon neutrality,” Mohanan says.

He believes that there is a need to educate the market on heat exchangers used in chilled water HVAC applications, which could create enormous demand. Revisiting the tussle between shell &



Rennie Sequeira



Jibin Mohanan

**With optimised microchannel geometry, the new optimised microchannel heat exchangers provide the ideal balance between maximum heat rejection and internal refrigerant pressure drop**

tube and plate systems, he says: “We must educate our customers about the benefits of replacing old shell & tube technology with new plate heat exchangers. To compare, plate heat exchangers have a lower total cost and low installation and maintenance costs. Plus, they can enhance the efficiency of the process.”

### MAINTENANCE AS A CRITICAL ASPECT

Whilst customisation is important, as is the choice of the specific technology, looking after the heat exchanger is a critical aspect in saving costs. Some of the main factors that cause heat exchanger failure in HVAC systems are gasket failures or buckling of plate packs, when exposed to pressure surges, or damage resulting from poor assembly practice or a misaligned plate. Heat exchanger failures could also be due to a decrease in performance, when plate channels are blocked or when airlock has developed in pipework, or when the unit

is running in co-current flow, instead of counter-current. Furthermore, improper design can impact efficiency for the whole system and heat exchangers.

“Timely professional cleaning will reduce the downtime period and spare part requirements,” Mohanan says. “Even when you select the right heat exchanger, it has to be optimised and commissioned correctly, in addition to regular maintenance and cleaning, to achieve the maximum output. Poorly designed and maintained heat exchangers might even cause more consumption.”

Sequeira adds, “To ensure longevity of heat exchangers, an automatic backwash system (ABS) can be installed for each plate and frame heat exchanger to thoroughly eject macro- and micro-foulants that become impinged in the plate packs.”

Such is the importance of maintenance that the heat exchangers service and maintenance market is seeing many emerging solutions that allow preventive maintenance to reduce

unplanned stops, increase equipment lifetime and reduce workplace accidents. For example, Mohan says, companies are now offering remote monitoring, preventative maintenance, reconditioning, remote support and retrofit, amongst other services. These technologies also enable the best use of resources and reduce spare parts stock.

### GROWING F&B APPLICATIONS IN THE REGION

While the discussion focuses on HVAC, what about R? Indeed, what are the milestones touched by the cold chain sector? After all, heat exchangers regulate fluid temperatures in processing systems to meet pasteurisation, filling operations and food safety requirements. Indeed, in the food and beverage industry, heat exchangers reduce or eliminate microbial presence to make products safe for consumption and prevent spoilage.

Heat exchangers demand from the

F&B and food storage industries has been rising in the region, especially in the light of organisations transitioning to ultra-low-GWP refrigerants, such as R1234ze and R515B in large, air-cooled chillers. “The low density of these refrigerants makes system performance highly sensitive to pressure drops,” Mohanan says. “With optimised microchannel geometry, the new optimised microchannel heat exchangers provide the ideal balance between maximum heat rejection and internal refrigerant pressure drop.”

Plate design enhancements, like the FrontLine range, cater to the dairy, beverage and processed food applications to provide an optimal combination of temperature and holding time, ensuring precise pasteurisation, UHT treatment and regeneration, Mohan says.

Sequeira, wading into the discussion, says: “Interestingly, there is also a growing demand for plate

and frame heat exchangers in the GCC region for potable water cooling. Albeit the sales revenue of plate and frame heat exchangers for potable water cooling is low, the volumes are higher, as regulations provide the impetus for pre-fabricated domestic water-cooling skids with plate heat exchangers.”

### THE ROAD AHEAD

Broadly speaking, though, where are heat exchangers as a market sector? Indeed, what is the macro-scenario? Sequeira says: “Market potential of plate and frame heat exchangers for District Energy is primarily regulated by the development of master-planned communities and growth in construction sector governed by stringent environmental regulations to reduce carbon footprint. Meanwhile, District Cooling plants provide a growth stimulus for heat exchangers in the GCC region countries.” [ccme](#)

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## HARVESTING ENERGY FROM CHW PLANT HYDRONIC LOOPS

In-pipe Hydro Generator is the way forward and can be installed on the plant's cooling tower blowdown water lines to generate electricity



**HAVE** been in the large-tonnage chiller and chilled water plant service and solutions industry for over 44 years, and throughout my career, I have always been a proponent of reducing the power and water cost of operating chillers and chilled water plants.

Back in the early 1990s, when I worked in Kuwait for Bechtel Construction, The Kuwait Oil Company (KOC) and Carrier Corporation, I was looking for a non-chemical water treatment solution that would allow the repurposing of water, elimination of toxic chemicals and the reduction of blowdown water at the KOC District Cooling plants, in Ahmadi. By the way, KOC had District Cooling long before any of the companies you know of in the region now, were even dreamed of.

We tried a few of the “technologies” being offered back then, but none were successful. It wasn't until the turn of the century, around 2005, that I learnt of Pulse Power technology. And after numerous site visits and beta testing, I found it to be the answer to non-chemical water treatment; and to this day, I recommend the technology to anyone who is interested in removing hazardous chemicals and saving water and power. The point of mentioning this is that looking for technologies that save energy (power, water, fuel, steam) in our industry is sometimes a long journey.

For the past 20 years, I have been wondering why the industry does not try and harvest energy from chilled water and condenser water loops. I touched on this topic about 12 years ago, when I presented at an IDEA (International



*Dan Mizesko is Managing Partner/ President, U.S. Chiller Services International. He may be contacted at [dmizesko@uscsny.com](mailto:dmizesko@uscsny.com)*

District Energy Association) conference on the topic, Chiller Plant Efficiency is the Key to District Cooling Economics'. In the presentation, I suggested that an in-pipe Hydro Generator can be installed on the plant's cooling tower blowdown water lines to generate electricity. I honestly thought someone in the IDEA community would have incorporated the technology, and even would have taken it a step further and utilised the technology on the makeup water supply and throughout the chilled water loop.

Well, it's been over 12 years now, and I have not heard of any District Cooling company, standalone plant or high-rise building utilising this technology. I feel the time is perfect to revisit the opportunity, as the UN just gave a grave warning regarding climate change, and we all need to try and “think outside the box” to reduce our energy consumption.

In-pipe hydro systems can operate across a wide range of head and flow conditions inside most common piping materials.

Almost all buildings in large cities across the region are served by pressured piping systems to supply water where it is needed for drinking, and for domestic and industrial use. Water-cooled district cooling plants and central chilled water plants consume large amounts of water and are also served by pressurised piping systems

to supply water to the cooling towers, whether potable or treated sewage effluent (TSE). All buildings have drain and sewage systems, which are usually gravity fed, while District Cooling plants and central plants all have blowdown water drains. Both the supply water and blowdown water can be incorporated with in-pipe hydro generators to harvest untapped energy.

In chilled water loops, there are typically pressure-reducing valves (PRVs) that maintain pre-set pressure ranges to protect equipment and maintain proper flows. Theoretically, any chilled water system that utilises pressure-reducing devices could replace them with in-pipe generators, maintaining the same control on water flow and pressure whilst producing usable electricity.

The in-line hydro generators currently available have a design that utilises a Francis turbine with connected shaft as both the pressure-reducing and energy-harvesting device. These hydro

generators come in sizes from one inch to 60 inches internal to the pipe or external with a water bypass. So, in my opinion, chilled water plants and high-rise buildings with chilled water piping can harvest energy with hydro generators.

Let's take for example a high-rise building of 30-plus storeys. The Dubai Marina and Downtown Dubai alone have hundreds of buildings like this. The chilled water being pumped up throughout the building will require large amounts of pressure to supply water to the higher floors, and the excess pressure in the lower section is usually wasted via PRVs and could be hydro generator harvested. The taller the building, the more potential energy generation. I envision hydro generators could be installed on the cooling tower make up water, blow down lines, the domestic main water inlets, chilled water return lines, etc.

I feel the wasted and untapped energy in the industry is massive and can be harvested. With all the District

Cooling piping networks, high-rise buildings, cooling towers, incoming water supply to buildings and cooling tower blowdown, the region is awash in opportunity to utilise in-pipe water hydro power harvesting. With known pressures and flows in pipe, hydro power will provide predictable and reliable energy generation.

As I write this article, we at US Chiller Services are working with a company in the United States that designs and manufactures in-pipe hydropower with technology that generates clean electricity from excess pressure in drinking, irrigation and industrial water systems. As we have not seen this technology in the region, we have decided to work with the company to try and identify potential sites that can benefit from the technology. When installed at a facility, the end-user can benefit from the energy and can either use in their facility or send it back to the power grid. [ccme](#)



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# DALKIA, THE RIGHT PARTNER TO REACH THE NET-ZERO TARGETS IN THE MIDDLE EAST

**Steve Lemoine**, Managing Director, Dalkia Middle East, speaks on how the company is rising to the challenge of climate change by implementing local solutions that are innovative, cost-effective, eco-friendly and practical. Excerpts...



An Operation & Maintenance engineer at work  
Source: Dalkia Middle East



Chiller maintenance at Bahrain International Airport  
Source: U.S. Chiller Services

### Could you introduce Dalkia Group EDF and your services in the Middle East?

**Steve Lemoine:** As a subsidiary of EDF Group, Dalkia is an international player providing low-carbon energy solutions and operations with a worldwide presence. For over 85 years – and with more than 19,000 employees, worldwide – Dalkia has developed renewable and recovered energy sources and solutions while helping its clients to achieve energy savings and to reduce their CO<sub>2</sub> emissions. Dalkia is also a close-knit community and stands by its clients and partners through thick and thin. Together, we are fighting the climate challenge by implementing local solutions that are innovative, cost-effective, eco-friendly and practical.

Today, Dalkia is striving through a successful international development in the Middle East. The reasons for the region’s growing importance in the energy innovative solutions field are threefold. First, the Middle Eastern countries are committed to the energy transition. Second, our clients are looking for decarbonization solutions, and third is the possibility of developing contracts to sustain these solutions over the long term. This is our core business, and our offer in the Middle East is based on bringing energy efficiency and optimization for our clients, operation and maintenance excellence of technical

equipment, and on building, maintaining and operating district cooling networks.

### Could you elaborate on Dalkia’s presence in the Middle East?

**Lemoine:** Dalkia EDF Group entered the Middle East towards the end of 2018 to develop 100% digital offerings for buildings, with the aim of generating energy savings for our customers without investment. At the time, I was the only person present on ground. Four years later, Dalkia in the Middle East has a strong local team of experts and engineers with three offices – one in Dubai, one in Abu Dhabi and our recently inaugurated local headquarters in Riyadh, Saudi Arabia.

### Do you have any significant ongoing or recent projects that you would like to showcase?

**Lemoine:** We are very proud to support the Middle East in its energy transition. We have secured contracts with public and private sectors, in every field of our expertise.

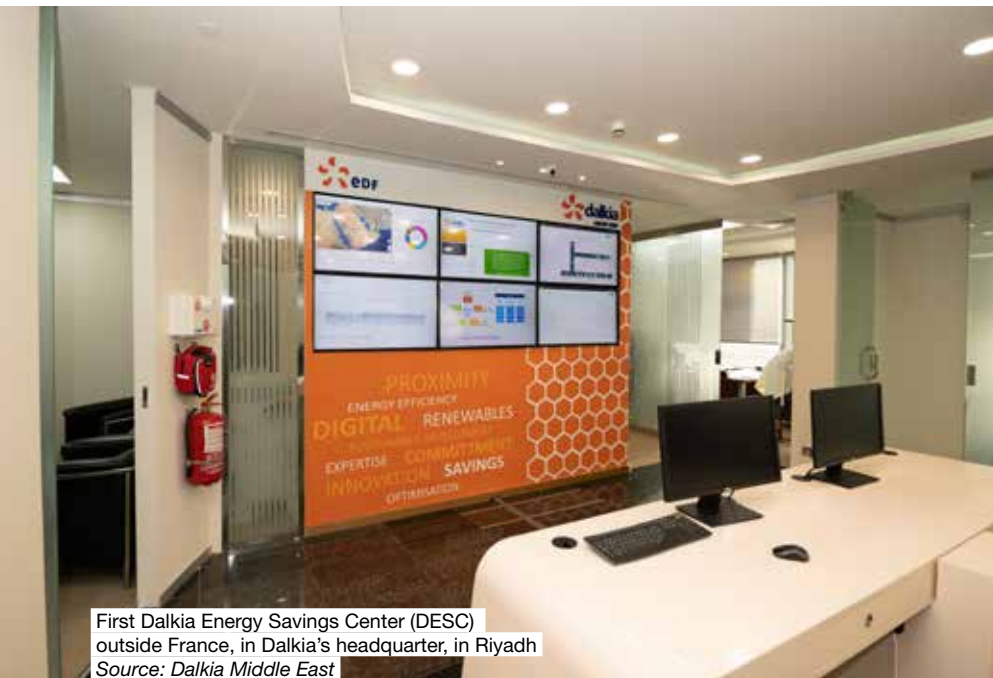
Everything started with our first energy efficiency contract in the Middle East in 2019 with an iconic tower in the capital of Saudi Arabia, which enabled us to set up the first Dalkia Energy Savings Center (DESC) outside France. From this first successful reference, we were able to build a broader ambition: We began to position ourselves in Energy Performance

Contract tenders for public buildings.

Then, we led alongside with Abu Dhabi Energy Services (ADES) a detailed Facility Study at the United Arab Emirates University. This project aims to deliver significant energy savings, representing over 25% for the entire university campus; and we should soon start the energy performance contract.

When it comes to district cooling services, Dalkia has been appointed to design, build, operate and maintain Mohamed Bin Salman Non-Profit City district cooling network in Riyadh. The district cooling capacity will be equivalent to the district cooling of The Defense District in Paris, France.

Last, but not the least, we recently acquired U.S. Chiller Services company. U.S. Chiller Services is the largest independent global chiller and energy solutions provider in the Middle East, with offices in the GCC region countries and the United States. By integrating U.S. Chiller Services’ customers, references and employees specialized in operation and maintenance of large refrigeration production units, we have taken a key step towards the Middle East’s sustainable future. With around 400 employees, we are now a major industrial player supporting the region’s decarbonization strategy and are perfectly aligned with the region’s commitments towards a net-zero future. ▶



First Dalkia Energy Savings Center (DESC) outside France, in Dalkia's headquarter, in Riyadh  
Source: Dalkia Middle East



Inauguration of Dalkia's headquarter in Riyadh. In the picture are: Sylvie Jehanno, CEO, Dalkia EDF Group; H.E. Ludovic Pouille, Ambassador of France in Saudi Arabia; and Steve Lemoine, Managing Director, Dalkia Middle East  
Source: Dalkia Middle East

## What are Dalkia's development ambitions in the region?

**Lemoine:** Our ambition is to become one of the leaders in the Middle East's energy transition, which involves developing three integrated activities in the region.

The first activity is energy efficiency, stimulated by the increase of electricity prices, the recent introduction of a VAT and the desire of local governments to accelerate the energy transition. Dalkia estimates this market to be worth more than USD 5 billion, and we have already secured several projects in the UAE and Saudi Arabia.

The second is Dalkia's historical core business: O&M of technical equipment. This is an important market for the Group, with strong development potential, and where there are still few players offering high value-added services.

Finally, the third activity is district

cooling networks. Innovation, digitalization and market's decarbonization are our priorities, as the cooling network market is estimated by our experts to be worth more than USD 10 billion in the Middle East in the coming years.

## What are your forecasts for Dalkia in the Middle East for 2030?

**Lemoine:** Our aim is to remain attractive for our customers and our employees, while being at the forefront of the region's long-term vision for decarbonization and performance.

Our strength is also the international expertise and experience. By developing our projects in the Middle East, we bring into action the technology and innovations, develop local human resources and ensure effective knowledge transfer. The quality of local engineers in the sector is established



During the groundbreaking ceremony of the Riyadh facility  
Source: Dalkia Middle East

amongst the younger generations, who are looking for opportunities within the full value chain of the energy transition.

I am convinced that we are at the right place at the right time, in a fast-growing and dynamic region, where our expertise can be widely deployed to create technical, economic and human value, and become a local player, since we are a company anchored in the territories. **ccme**

Steve Lemoine has been working for almost 15 years in the fields of energy efficiency, Operation & Maintenance (O&M) and district energy networks.

He was leading Dalkia's development in Eastern Europe, where the group has acquired several energy services companies and district energy networks. Steve oversaw the consolidation and development of these companies.

Since 2018, Steve is the General Manager of Dalkia in the Middle East. His goal is to develop Dalkia's core business in terms of energy efficiency, digital offering and performance monitoring, operation & maintenance excellence, and district cooling networks. His aim is to generate savings for his clients.

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## MITSUBISHI HEAVY INDUSTRIES THERMAL SYSTEMS, LTD., EMPOWER SIGN CHILLER ORDER FOR **100,000 REFRIGERATION TONS**

District Cooling provider will use the new chillers in its DCPs in Za'abeel, Business Bay and Dubai Land Residence Complex, Mitsubishi Heavy Industries Thermal Systems, Ltd. says

**M**ITSUBISHI Heavy Industries Thermal Systems, Ltd. has signed a deal with Emirates Central Cooling Systems Corporation (Empower) to supply advanced water-cooled centrifugal chillers, having a total cooling capacity of 100,000 refrigeration tons, for Empower's various District Cooling Plant (DCP) projects in Dubai.

Empower will use the new chillers in its DCPs in Za'abeel, Business Bay and Dubai Land Residence Complex (DLRC) in Dubai to serve residential, commercial, educational and mixed-use projects, in addition to implementing well-thought-out plans related to developing Empower's infrastructure and raising its performance to unprecedented levels.

The deal bears future fruit for modernising Empower's systems with innovative technologies that contribute to low-noise production processes, as well as more energy efficiency and higher performance in protecting the environment. These achievements are in line with Dubai's long-term strategy that aims to reduce energy and water consumption by 30% by 2030, as well as the UAE's strategy and sustainability plans to reduce carbon footprint.

Masahiko Sasakura, President, Mitsubishi Heavy Industries Thermal



Mitsubishi Heavy Industries Thermal Systems, Ltd.  
<https://www.mhi-mth.co.jp/en/>

Systems, Ltd., said: "MHI Centrifugal Chiller is the best answer for giving due consideration to the environment.

"Being required for contemporary office buildings, huge shopping malls or factories, it is an environmental protection effort. The key issue is the air conditioning system, and the most important factor is efficiency of chillers used in the system. Our centrifugal chiller puts drastic energy saving in the place. Putting in highly efficient chillers are not only contributing to environment conservation, the reduction of CO<sub>2</sub>



Masahiko Sasakura, President

emissions, etc., but are also resolving the business challenge of saving operational cost, etc."

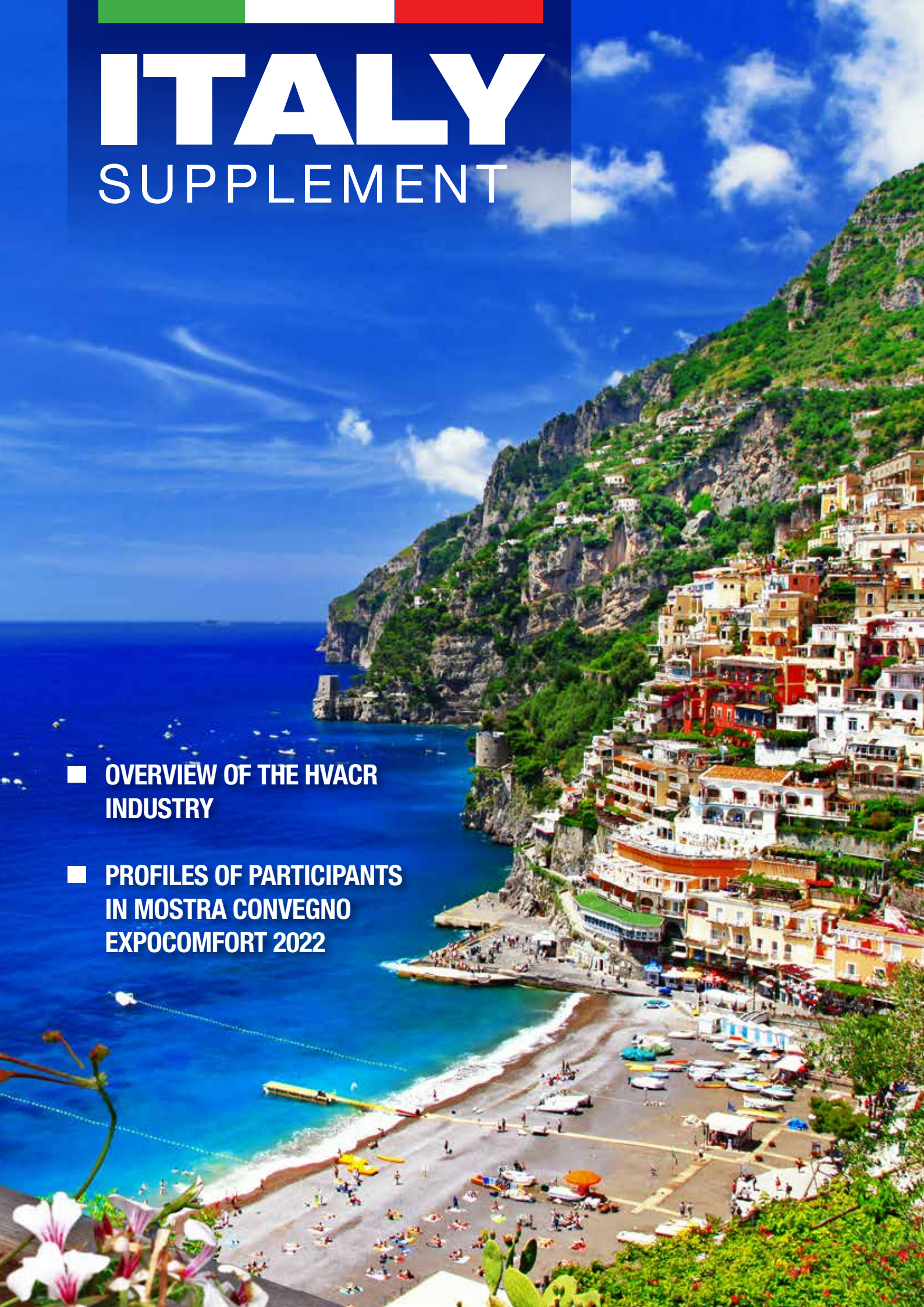
This is the proposal from Mitsubishi Heavy Industries Thermal Systems, Ltd. [ccme](#)



# ITALY

## SUPPLEMENT

- **OVERVIEW OF THE HVACR INDUSTRY**
- **PROFILES OF PARTICIPANTS IN MOSTRA CONVEGNO EXPOCOMFORT 2022**



# OVERVIEW



# THE GREAT FIGHT

Italy was among the hardest hit by the pandemic, with cases peaking to 200,000 a day. Adversity, however, pushed the country to invest in fighting the pandemic with a more holistic approach that focused on effective management of the built-environment and HVACR-related innovations, writes **Nafeesa Mohammed**



**T**HE pandemic impacted every industry across the world, and the HVACR segment was no exception. The HVACR industry saw a total shift with increased awareness of Indoor Air Quality (IAQ) and ventilation and improved energy-efficiency targets. This, indeed, created demand and opportunities in the sector. The Italian HVACR market saw a similar effect, said Sam Peli, General Manager of Sales EMEA, Seeley International.

Elaborating, Salah El Deeb, Area Sales Manager, Castel, said: “The Italian

market for HVAC and, in particular, refrigeration has seen, in the past five years, an annual growth of around three per cent.” Confirming the trend, Marco Buoni, HVACR Industry Expert, Centro Studi Galileo (CSG) and former Director of Air conditioning and Refrigeration European Association (AREA), said that IAQ solutions and refrigerators in retail and hospitals, in particular, saw increasing demand during the last few years, as the pandemic hit Europe. In fact, refrigeration demand for supermarkets grew around 20%.

However, the scenario was not all optimistic, as 2020 witnessed a general slowdown in turnover, with more or less significant percentage losses depending on the types of products and sizes. Gessica Perani, Marketing and Communication Manager, Errecom, explains: “For the direct expansion sectors, market surveys revealed a negative trend for most types of products, such as a seven per cent decrease in value and a negative two per cent in quantity for mono-split; a negative four in ▶

# OVERVIEW



Amadeo Scarpa



Andrea Pagan



Marco Buoni

value and negative three in quantity for multi-splits; -15% in value and -12% in quantity for VRF systems. Roof-top air conditioners were also in the negative territory compared to previous years. They lost 22% in value and 18% in quantity.”

Amidst this were a few bright spots. As Buoni points out, “Most sectors requiring centralised air conditioning saw a surge in demand for efficient air filtration during the COVID pandemic, including hospitals, transportation, education, supermarkets and government spaces.” Echoing this, the team at ISCLEANAIR speaks of how the pandemic spurred demand for specific sectors with overall climate control requirements across verticals, with a growing emphasis on real Indoor Air Quality (IAQ). It speaks of how there was an increase in focus on applying improved ventilation solutions and efficiency.

Irrespective of a slump or spurt in demand, almost all sectors suffered disruption through restrictions and staff absence, but perhaps the most profound was delays and difficulties in sourcing components from global markets due to the disrupted logistics industry.

Indeed, Buoni feels that infrastructural requirements have been more of a challenge than availability of innovative products. “New products have been developed to meet the sustainability and efficiency goals for retrofitting as more than 50% of buildings in Italy are older

than 25 years,” he says. “We still see this demand continuing, especially in schools, because most children are not vaccinated and cannot be vaccinated. There is a lot of work going on even now, after three years of COVID onset.”

## THE AFTER-EFFECTS

Today, the storm has subsided, but the country continues to implement a number of facility guidelines for ensuring healthy, ambient and sustainable public spaces. Andrea Pagan, Application Manager - Ventilation and Systems, Carel Industries, says: “Mechanical ventilation has become a fundamental requirement for new facilities for residential environments. Adding these systems means new constructions are easier, but it is also possible in existing buildings, even if it involves adaptation works that affect internal activities.”

Buoni elaborates: “Energy efficiency and health became the main objective of government building guidelines. They are more focused on energy saving while improving building ventilation. As per these requirements, all new buildings need to have mechanical ventilation systems, renewable energy components and energy efficiency certifications.”

Buoni says the general trend is that new and retrofit projects are highly concentrating on higher air filtration and ventilation and air quality solutions. The

focus on IAQ is not a unilateral decision of building owners, though, he says, adding that they are doing so to meet the requirement and criterion for government subsidies.

While countries the world over started focusing on IAQ, there were different levels of adoption. Italy chose to emphasise on IAQ especially in the healthcare and education sectors, Peli says. “This resulted in air filters and purifiers gaining popularity,” he adds. El Deeb adds that subsequently, the general airside business, refrigerated logistics, supermarkets and the healthcare sector benefited from the pandemic.

## ADAPTING TO CHANGE

Businesses worldwide had to adapt to new methodologies in a stringent atmosphere of low volumes. Indeed, the filtering and conditioning of the external air before entering the spaces occupied by people is more straightforward. There are ventilation and conditioning systems, or where these technological solutions are standard elements in the design of buildings. The ISCLEANAIR team highlights a change in customer demand and a change in operation and planning among HVAC manufacturers and distributors. In Italy and Russia, air-handling unit (AHU) sales benefitted from the increase in the demand for ventilation due to COVID-19.



Sam Peli



Salah El Deeb



Jessica Perani

Awareness was vital during the pandemic. Perani says ventilation and sanitisation of air conditioning units became the new front of the battle against the virus across Italy for all intents and purposes. “The indoor units of air conditioning systems, if properly sanitised and cleaned, can be useful tools to improve the Indoor Air Quality of homes, offices, schools and hospitals.” Perani says.

Italian HVACR innovation in this time included new air filtration systems, automatic ventilation integration, ultraviolet and other air cleaning solutions, IoT-based machine monitoring, and carbon dioxide level detectors/trigger vents, Buoni says. “In schools, specifically, there are CO<sub>2</sub> detectors and automatic ventilation systems to check the concentration and trigger ventilation,” he adds.

### **IMPROVING EFFICIENCY AT THE SAME TIME**

While ventilation occupied mind-space during the pandemic, there was awareness on not taking the foot off the pedal when it came to energy efficiency, especially as studies emerged of IAQ interventions, including allowing less recirculated air, meaning a 30% increase in energy use in buildings. Peli explains that most buildings were largely under-occupied during the first COVID outbreak, and existing HVAC capacity was still enough even with reduced air recirculation (or no

air recirculation at all). “With occupancy rates bouncing back to pre-COVID levels, it has become increasingly evident that installed capacity might not be enough to cope with the new fresh air approach – or if it is able to, power consumption would sky-rocket,” he adds. This will make emission targets way more challenging to be achieved, unless target indoor temperatures can be reviewed or more efficient fresh air technologies become widely adopted.

Pagan says that adopting COVID regulations can lead to a considerable increase in the consumption of energy through greater ventilation, which can be estimated to be even three times more than in the past. “Stopping recirculation, using active ventilation 24/24 and by-pass of heat recovery units, interrupting DCV strategies are all actions that have an important impact but are not sustainable in the long term,” Pagan points out.

Weighing in, Peli asserts that immediate, short-term reaction has been a reduction in air recirculation and air transfer between different environments. As most buildings were unoccupied or under-occupied due to confinement measures and remote working, this strategy has been relatively successful, he says, but adds, “With businesses, offices and schools gradually returning to full occupancy, additional avenues will need to be investigated, including revisiting

set-point temperatures, adopting free-cooling and more efficient retrofit systems (adiabatic systems), wider adoption of air sensors and smart controls.”

Amidst this dilemma of finding a delicate balance between energy efficiency and IAQ, Pagan points out, is the IoT revolution. The Internet of Things is revolutionising the way users approach technology across all industries, he says. The latest revision of the European Energy Performance of Buildings Directive (EPBD) focuses on promoting the adoption of smart technologies, particularly through establishing a smart readiness indicator (SRI), he says. This indicator allows assessment of the ability of buildings to adapt their operations to the occupant’s needs, including optimising energy efficiency and overall performance and adapting their activity in response to signals from the grid (energy flexibility). “The SRI indicator should raise awareness among building owners and occupants of the value added by building automation and electronic monitoring of building technology systems and give occupants confidence in the actual savings that these new advanced features bring,” Pagan says. Although this definition of smart buildings refers primarily to energy issues, it is clear that smart ventilation is a crucial factor in buildings’ smart-readiness, not only to reduce energy impacts but also to provide adequate IAQ. ▶



## GOVERNMENT INTERVENTION

As part of the EU Recovery Plan, Italy has earmarked national resources worth Euro 30.6 billion to strengthen the Italian economy while addressing a number of structural weaknesses and pursuing significant objectives, such as the green transition and the digital transformation. The regional plan also overviews the policies to combat climate change and global warming and sustainable development, energy efficiency and circular economy. Amadeo Scarpa, Director, Italian Trade Agency (ITA), says: “European Commission assessment placed Italy as one of the top countries fighting global warming with over 25% of the total economic allocations under Italy National Plans to this cause. The achievement in terms of technology, policies and best practices in energy saving and renewable energy, in particular, are at the core of Italy’s integrated National Plan for Energy and Climate. The goal is to bring the renewable share of Italy to 30% by 2030.”

Renewable energy is a significant focus of Italy’s national plan. Currently, at 27% of the total energy generation, the renewable energy sector in the country has solar, hydroelectric and wind power generation. “Imagine utilising this renewable energy for air conditioning, refrigeration and ventilation, and pumps,” Buoni says. “This could literally negate HVAC’s environmental impact completely.”

Adding to this, Perani says that among the different government initiatives, the ‘Superbonus 110 tool’

has stood out. The Italian government developed the ambition to relaunch the building sector and react to the critical climate and environmental challenges. “This administrative order provides incentives to encourage energy efficiency, anti-seismic measures, as well as installation of photovoltaic systems, and offers a deduction rate of 110% for expenses incurred by June 30, 2022 (or by December 31, 2022, and June 30, 2023, for specific cases),” Perani says. “There are different eligibility requirements, such as the obligation to improve the energy class of buildings by at least two points.”

At the same time, IAQ has received government intervention. The Italian government witnessed severe mortalities, which made them take a strong stand on implementing key initiatives. In addition to making the vaccination available for everybody, the Istituto Superiore della Sanità (Italian National Institute of Health) issued several reports addressing HVAC requirements. The most recent revision in November 2021 includes very detailed guidelines for HVAC in both residential and work environments, primarily reflecting REHVA, AICARR (Italian HVAC Association) and ASHRAE guidelines. “The guidelines call for 24x7 ventilation in classrooms, where air purifiers are not installed,” Peli says. “Higher stress is that minimum RH levels should be maintained for viruses not to propagate. In particular, the report stresses on 40-60% RH as a good target to be maintained in the summertime.”

In addition to stringent construction and retrofit requirements for buildings, Italy is implementing policies for HVAC systems used for residential and office users. Buoni says: “The government has recently introduced new guidelines that require an indoor temperature of more than 25 degrees C. This initiative to enhance air conditioning use is more focused on energy saving, while improving building ventilation technology has been another focus.”

Driven by legislation and subsidies, which allow at times to recover the cost by 110%, new and retrofit projects are highly concentrating on energy efficiency in air filtration, ventilation and air quality solutions. Elaborating further, Buoni says: “Italy plans to phase out the use of gas boilers and replace them within the next 10-15 years. This will give a huge momentum to efficient heating technologies with low GWP.”

## SPREADING THE GOOD WORD AROUND

These improvements, its manufacturing community believes, are placing Italy at an advantageous position when it comes to export potential. Italy is among the top five exporters of renewable energy, mainly components for renewable energy, to the UAE. “In total, the Italian companies have a turnover of almost EUR 23 billion, making UAE a top destination for renewables technologies,” Scarpa says.

Adding to this, Buoni says the country is a leader in HVAC technologies with many patented products with a higher environmental score. “Most of our products offer energy efficiency and help in ESG goals for the region,” he says. “Italian manufacturers have been experiencing growth in demand for innovative IAQ solutions in the region. Some notable innovations are in the air filtration and ventilation space.”

More than 3,000 Italian municipalities create renewable energy that exceeds their own household electricity needs. That means many of these households also have heating and cooling needs 100% satisfied through renewable energy. Scarpa says: “This makes Italy a great testimony partner, and this could be a win-win increase in bilateral trade in this sector. This is due to invention, trademarks and new patents on one side, and innovation research, applied manufacturing and sustainable manufacturing on the other.” **ccme**



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# T C O

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# LOOK WHO IS EXHIBITING AT MOSTRA CONVEGNO

Here, we present some companies that will be presenting at the Mostra Convegno Expocomfort, from June 28 to July 1...

## **ACS KLIMA TO EXHIBIT "HYGIENIC AIR-HANDLING INNOVATIONS"**

Turkey-headquartered HVAC equipment manufacturer, ACS Klima, which produces and sells equipment under the CLIMACS brand, will be showcasing its latest air-handling units (AHUs), hygienic AHUs, package type hygienic AHUs, package type pool dehumidifying units, rooftop package units, fan-coil units (FCUs) and other HVAC equipment.

Seda N Temelli, Export Sales Manager, ACS Klima Isitma Sogutma Havalandirma A.S., said: "As the world moves towards sustainability and digitisation, the HVAC sector is also following suit to provide customised solutions catering to these changes. As a manufacturer, we provide customised products and designs to our customers. In this case, sustainability is a key driver.

"New, environmentally friendly buildings are being designed to use a minimum of energy and make efficient use of the sources in heating/cooling buildings. New HVAC technologies, such as solar solutions, are a case we are excited to view. Smart monitoring systems are another innovation that allow monitoring energy consumption, maintenance suggestions to be made, and personalised suggestions to reduce energy consumption and improve energy efficiency."

Speaking about the importance of these technologies to the Middle East region, Temelli said: "Our main customers are in the Middle East. We also have a factory in Qatar to serve the growing demand from the region better. Our products can successfully meet the needs of very cold and very hot temperatures."

**ACS KLIMA IS IN HALL 22/STAND: D62**

## **CALEFFI TO EXHIBIT ITS PICVS, AMONGST OTHER PRODUCTS**

Caleffi, which is in the hydraulic solutions space, said it is returning to exhibit at MCE after three years to showcase its cutting-edge technologies and bring together key decision-makers and industry to drive vital business connections forward.

According to Caleffi, there is much excitement as MCE is among the first international events in the HVAC sector after the restriction placed by the pandemic, and there is undoubtedly great anticipation.

The company said it will be exhibiting its LEGIOMIX® 6000 series 24V - electronic mixing valve with programmable thermal disinfection and disinfection checks; FLOWMATIC® 145 series - pressure independent control valve; Terminal unit connection kit 149 series; Pressure reducing valve 535H series; Anti-scald thermostatic mixing valve 5213 series and the multifunction thermostatic regulator 116 series.

Caleffi said it develops and produces components for heating, air conditioning and plumbing systems, heat metering systems and specific components for renewable energy systems and controlled mechanical ventilation systems.

**CALEFFI IS IN HALL 7/STANDS: A41, A51, C42 AND C52**

### **AUTO GAS NORD - GTS TO EXHIBIT LOW-GWP REFRIGERANTS, R600A AND R290**

Auto Gas Nord will be showcasing GTS' low-GWP natural refrigerants that reportedly offer higher energy efficiency and the lowest GHG emissions. GTS said it specialises in producing and distributing special, technical and pure gases, catering to different sectors, including the aerosol industry, refrigeration, construction and food.

Paolo Zunino, CEO, GTS Spa/Autogas Nord Spa, said that Auto Gas, in addition to its core business of LPG, supplies 100% green natural gas and electricity, energy production from renewable sources and solutions for energy efficiency and electric mobility. "We guide our customers along the path of energy transition, in line with ESG criteria, for creating a sustainable business model by integrating sustainability, innovation and digitalisation," he said.

The Polarpure R600A refrigerant gas is GTS' pure isobutane, used primarily for domestic refrigeration (fridges and freezers). The product is also suitable for applications such as LNG plants and power stations, the company said. Meanwhile, the Polarpure R290 refrigerant gas is GTS' pure propane refrigerant. It is the most widely used product in air conditioning systems, commercial freezers and fridges, ice-making machines, bottle fridges, vending machines and cascade refrigeration systems for supermarkets, the company claimed.

"This gas is the best ecological alternative to environmentally harmful R134a," Zunino said. He added that due to the 24x7 need for air conditioning in the region, it is critical to look at more sustainable solutions. Natural refrigerants, he said, are the cheapest alternative to phasing-out HFCs (Freons) and HFOs.

**AUTOGAS NORD-GTS IS AT AGN ENERGIA BOOTH, IN HALL 1/STAND: B09**

### **TECNO.MEC TO EXHIBIT MISMATIC AUTOMATIC HUMIDIFICATION PUMP**

Tecnocooling, a division of Tecno.Mec, will be showcasing its automatic high-pressure professional misting pump MISTMATIC at the show.

According to Tecnocooling, the automatic pump is perfect for multiple-zone humidification, such as for cold storage units; greenhouses; and textile, wood, paper, and tobacco industrial humidification processes.

The series of high-pressure pumps reportedly offer higher safety standards and efficient operation to meet all requirements of building a professional misting system with flow rates ranging from 0.5 to 5 litres/min using a single-phase power supply.

MISMATIC comes with a built-in digital cyclic timer offering complete and efficient control of the misting system, the company said. When used optimally, the company added, it can provide an increased advantage on water and energy consumption with savings up to 80% compared to other systems.

The company said that the incorporated variable frequency drive (VFD) allows setting up independent misting lines/zones and makes the pump fully automatic. According to the company, the advanced controller, TIME-2.0 allows to set continuous or intermittent spray, drain time (T1+T2+T3), lack-of-water shutdown, and remote ON/OFF control using the Modbus Wi-Fi APP by TECNO.MEC.

**TECNO.MEC IS IN HALL 13/STAND: F11**

### **SALDOBRASE SRL TO SHOWCASE BRAZING SOLUTIONS AND PRODUCTS**

Saldobrase Srl, which offers brazing solutions for developing and manufacturing specific components and systems for air treatment, said it will be showcasing its 35-year and full-service portfolio at the MCE.

The company said it will showcase its unique expertise and products to companies in the HVACR, renewable sources and energy efficiency sectors. "In addition to displaying the best brazing solutions and products, we are looking to interact with leaders in the industry to share our know-how, new developments and innovative processes, which makes Saldobrase a trusted partner that makes quality and customer service its competitive advantages," said Andrea Bottazzi, Technical Sales Manager, Saldobrase.

"Our catalogues of high-quality products," he said, "meet a wide range of needs in brazing alloys that are used in joining tubes and components in the HVAC industry."

**SALDOBRASE IS IN HALL 22/STAND: S37**

## ZENIT TO PRESENT NEW SUBMERSIBLE ELECTRIC PUMPS

Zenit Group, an international pump manufacturer, said it will be presenting submersible electric pumps, its energy-saving pumps, a new range of mixers and an assortment of lifting stations at the event.

The company said visitors can learn more about the new pumpBOX lifting stations and the renewed range of blueBOX, products for homes and residential complexes, public establishments and civil installations. The company said it will be presenting its new clear and wastewater pumping and lifting solutions for water, sewage, waste and raw materials management.

Zenit operates in the wastewater treatment sector, with a range of high-performance electric submersible pumps and other products.

**BWT IS IN HALL 2/STANDS: C57, D58**

## EBM-PAPST TO DISPLAY ITS “INTELLIGENT SOLUTIONS”

ebm-papst said it will be presenting intelligent solutions and new developments in refrigeration, air conditioning and ventilation technology, and heating technology.

The company said the highlight of its display at the event will be the RadiPac series. The new, potent EC motor, FanDrive 280, is also being used in RadiPac for the first time, enabling a torque of 180 Nm with an electrical power of up to 24 kW, the company said. For example, it is being used in size 800 RadiPac, it said. It allows a free-air performance of up to 50,000 m<sup>3</sup>/h and maximum pressures of 2,300 Pa, it added.

Another product on display will be the new AxiEco series fans for applications that require high air flows with relatively high back pressure. The AxiEco series is now being expanded to include sizes 630, 800 and 910 to make air flows of over 25,000 m<sup>3</sup>/h and pressures of up to 700 Pa, and is suitable for chillers and evaporators, industrial process cooling, data centres and mobile refrigeration technology, the company said.

Other solutions include RadiMix gas blowers for hybrid systems for gas condensing units and heat pumps.

**EBM-PAPST IS IN HALL 24/STANDS: B21-C22**

## CAREL TO SHOWCASE “SUSTAINABLE SOLUTIONS TO IMPROVE COMFORT”

CAREL, which specialises in control solutions for the air conditioning, refrigeration and air humidification sectors, said it will once again be exhibiting at the event.

Improving indoor comfort with sustainable and innovative solutions has become an essential part of the new normal, in which creating healthy environments and reducing energy consumption go hand-in-hand, the company said.

In line with this, CAREL said it will be focusing on displaying control solutions that adapt to any type of ventilation system, for both industrial and commercial applications and integrate active and passive heat-recovery units, sensors and humidification solutions into air-handling units.

According to the company, system management and performance optimisation are necessary steps to achieving this goal in a sustainable and efficient way. CAREL said it will demonstrate remote control digital services and round-the-clock support for humidification and ventilation systems, through qualified engineers for maintenance and for optimising the configurations of the installed solutions.

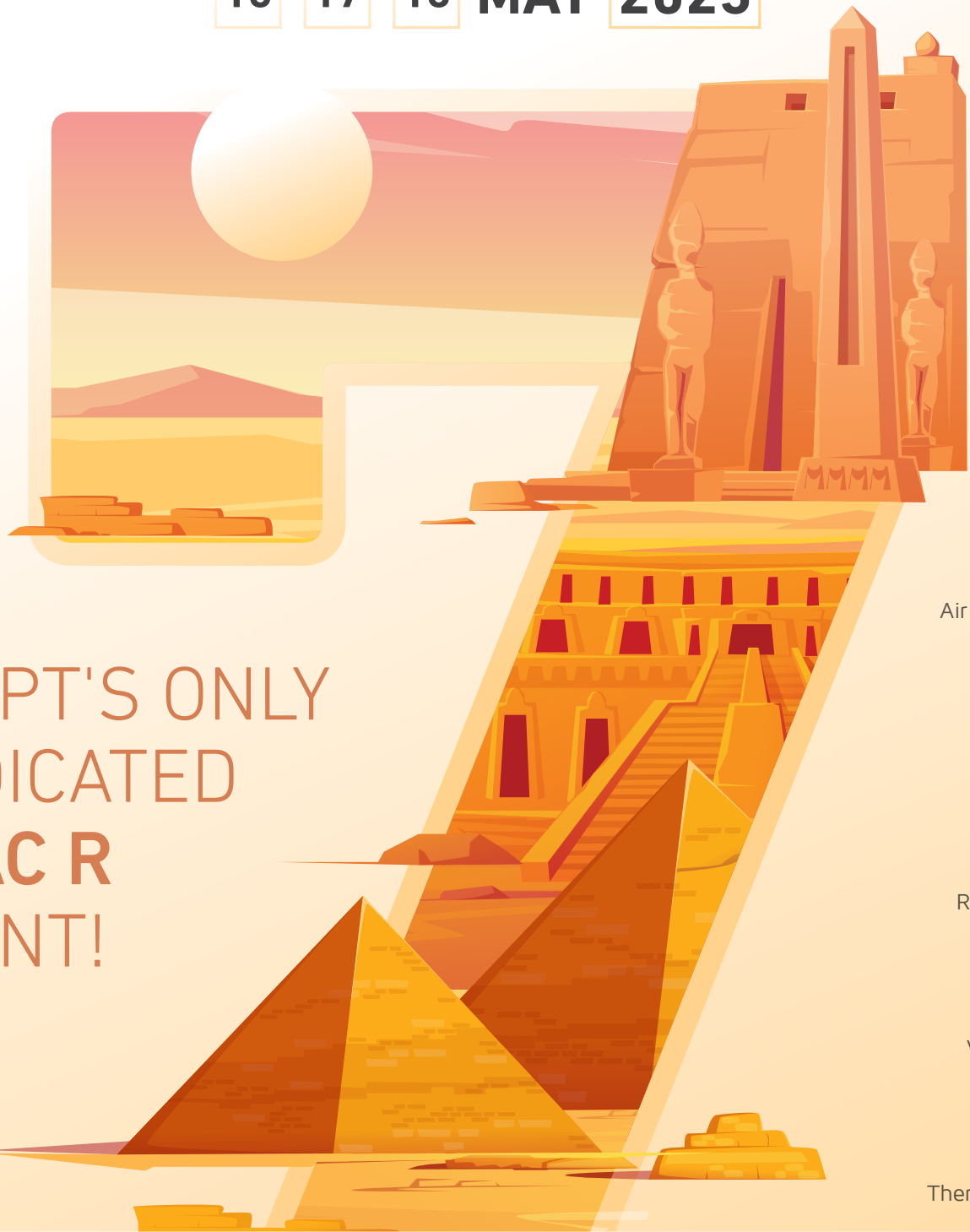
“We do not intend to simply exhibit products, rather we aim to provide our valuable expertise and experience to help our customers choose and better manage our solutions for air handling in terms of energy efficiency, comfort and sustainability,” said Roberto Sandano, Group Chief Sales & Marketing Officer – HVAC, CAREL. “We are aware that in buildings, the air conditioning system accounts for most of the energy consumption. Optimising operation of the overall system is the main way to increase energy savings.”

At this year’s exhibition, CAREL said, it will be organising a meeting on the topic of indoor air quality, titled “Impact of air humidity on health: The upcoming challenges for healthcare facilities”. The meeting will feature experts from the healthcare and HVAC businesses, who will discuss the scientific evidence demonstrating how correct air humidity control is an extremely valuable ally for health.

**CAREL IS IN HALL 22/STANDS: A31, A41**

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# ‘ENSURING ACCESS TO BUILDINGS IS KEY TO TRACING’

Close coordination with the government as a public-private collaboration is key to a successful city-wide auditing of buildings for better IAQ and protecting occupants from the spread of contagious diseases, says Meiny Prins, CEO, Priva, in this interview with **Surendar Balakrishnan** of *Climate Control Middle East*. Excerpts...



### **What according to you is the right approach to building tracing for better IAQ?**

Working with well-educated organisations and having advisory bodies to support would be at the base of our approach.

### **What would it take to undertake a building tracing programme in the GCC region?**

Ensuring access from the owners to buildings to conduct an inventory check will be key to undertaking a building tracing programme in the GCC region. This would ideally be done in close coordination with the government as a public-private collaboration.

### **What would it cost to audit the buildings? What would it cost to implement changes in the buildings?**

This is very hard to say, as the cost of implementation depends on many different factors, including the size of the building and the technology that is used for ventilation – complex or simple. It may also require a change in the HVAC installation, for example the amount of fresh air that enters the building.

### **Would governments in the GCC region view building tracing as part of an important strategy to ensure a region-wide future-proofing from future pandemics? And while at it, what can be done to improve buildings, as such (collateral benefits) – acoustics, thermal comfort, etc.? How can we quantify the benefits to justify costs?**

We definitely believe that building tracing could form part of a wider regional strategy to future-proof cities from pandemics. There is a lot that can be done to improve buildings, ranging from thermal comfort to air quality, and from insulation to energy efficiency. Many of these improvements, and their measures, run via the energy bill, whilst improvements, such as comfort, could prove their return in investment via fewer complaints and the related cost in resolving these issues.



### **Would the implementation of Building Tracing mean higher electricity costs?**

Not necessarily. The implementation of Building Tracing doesn't have to mean higher energy bills. There are lots of technologies available, including heat recovery solutions. There are also software-based solutions that deliver optimised comfort, reduced energy bills and a lower carbon footprint. It is possible to deploy an intelligent layer of cloud-based software that sits on top of your existing building management system. Using digital twin and AI technology, it can predict the energy needed to reach your desired climate conditions. To do that, it takes data from a range of sources, including weather forecast, thermal inertia and storage, building usage, sustainable energy. And it also takes flexible prices into account. This saves money and energy and reduces CO<sub>2</sub>.

### **Can passive cooling and ventilation solutions, along with renewable energy, help in lowering energy costs?**

Passive cooling and ventilations solutions along with renewable energy could certainly help in reducing energy costs.

### **Would the push have to come from the government to adopt building tracing and implementation of IAQ measures?**

When a certain standard is not widely adopted in the market and not yet seen as a common client requirement, then building standards imposed by the government (Indoor Air Quality) or

incentives schemes organised by the government (Building Tracing) could be the key to speed up a broader uptake. Otherwise, it may take much longer for clients to ask for and be prepared to pay for better standards."

### **Could the government give grants to those that implement passive solutions and renewable energy in buildings? Has anything of this sort been tried out so far in the region? Rooftop solar, does that come close enough?**

Implementing 'passive solutions in buildings' in the GCC region, such as natural ventilation, may be difficult due to the high ambient temperatures. Better insulation, including better insulated windows and better use of daylight, should be possible to adopt in the construction phase. Government standards and incentives could help accelerate this.

### **Could the Real Estate Regulatory Authority (RERA), in Dubai, establish a system of classification of buildings based on their healthiness? Would that attract tenants and, in the process, help them make informed choices to reject those buildings that are not healthy? Or, would it be a case of people not caring for such aspects, once the threat of the virus is behind us?**

One could question if promoting IAQ as an answer to COVID may still be relevant when the pandemic is behind us. A well-ventilated workplace is quite easy to achieve and the technology to do so is available. [Genc](#)



**IF YOU CAN'T  
MEASURE RISK, YOU  
CAN'T MITIGATE IT**

We know that IAQ can lead to serious health issues. It's more urgent than ever that we learn how to map, measure and optimise it, says **Sam Molyneux**, Co-Chief Executive Officer, Poppy



**I**n the last two years of responding to the pandemic, corporate and institutional leaders have spent millions and more in the hopes of protecting their communities. Fighting a disease that's spread almost exclusively in indoor spaces, they've reconfigured HVAC systems, added air purifiers and reconfigured floor plans with the objective of lowering the risk of viral transmission.

But have they done enough? The truth is, it's hard to say. Even those with the highest standards have spent two years wondering whether their actions have made a difference, or whether they could have done more. With so much at stake, it's urgent to understand the risk-mitigating effects of the actions, and to learn what else ought to be done. This is crucial to meaningfully protecting their communities as well as to evaluating their investments in doing so.

I co-founded Poppy Health a year before the COVID-19 outbreak. Even before the risks reached pandemic proportions, our mission was to map, measure and optimise the landscape of indoor air to keep everyone safe. There is no shortage of solutions to improve Indoor Air Quality (IAQ), but we have spent years developing the tools to scientifically and precisely understand how to improve it.

Our services extend from rapid alerts to signal the airborne presence of specific pathogens, like SARS-CoV-2, to biosafety-imaging, which allows us to understand the real-world movement of bioaerosols in physical spaces. Across North America and beyond, they have allowed developers, property managers, architects, designers and consultants to see for the first time just how effective their biosafety and air systems truly are. They have also provided blueprints for optimising IAQ and making offices, factories, schools, airports, gyms and cultural institutions safer for everyone.

### **BORN BEFORE THE PANDEMIC, DESIGNED TO SEE BEYOND IT**

In 2022, COVID-19 is still the primary concern. But anyone deep in the

industries still worries about bacteria and mould. Then, there is influenza. We have also all lived through annual "flu season", during which indoor environments mercilessly spread the virus, including H1N1. None of these worries should ever have become routine, and our systems and technologies should enable us to disrupt those routines altogether.

That means investing in IAQ and understanding the impact of those investments on human and financial

### **HOW MEP CAN DO WHAT VACCINE AND MASK MANDATES CANNOT**

Many site and facility managers are frustrated over their inability to effectively protect communities that might or might not take the necessary individual measures to protect themselves. Almost all the measures that help prevent infectious spread – including distance, testing, vaccines and masking – demand compliance from every individual who shows up.

**“ Our biosafety imaging reveals how ventilation, filtration and other safety measures are working, what needs attention and where our monitors can best mitigate the risks of exposure**

outcomes. Every dollar we spend helps limit the powerful disruptions to everyday life that are driving up stress, driving down productivity and costing businesses money. Before COVID-19, a Harvard University study estimated that sick days cost employers worldwide approximately USD 600 billion, annually. Infectious diseases are a major contributor to that tally. In fact, 80% of Americans average four colds and 28-40 sick days a year.

We developed tools and systems to transform our buildings into safer, healthier and more productive places. That goal was always important. The pandemic has reminded us why it is urgent.

COVID-19 has changed how people consider gathering indoors. Consciously or unconsciously, IAQ is now part of the calculus we all make when entering a building for a meeting, a meal or a movie. Sure, the comfort of our environment – influenced by light, temperature and humidity – still matters, but even for those to whom the word "biosafety" means nothing, they know that the "great indoors" is now a risk. These anxieties jeopardise every enterprise that depends on people showing up.

This has proven to be impractical to demand, or even to expect.

There are, however, crucial steps in mitigating infection risks – namely, the movement, filtering and purification of indoor air – that have been radically effective for every site that has used them. Thus, MEP professionals are well-positioned to implement solutions that shift the burden of safety away from individuals towards cost-effective solutions that protect entirely everyone on-site. These are the people for whom we have built tools and systems.

### **URGENT ALERTS AND IMPORTANT ANALYSIS**

Our systems revolve around the use of monitors. No bigger or more obtrusive than a smoke detector, the monitors detect microbes and pathogens in the air between people, as opposed to looking for them inside their noses. With frequent monitoring, we can provide actionable rapid intelligence "alerts", when an infectious individual enters a monitored space. This intelligence can lead to any number of actions. We can help someone who is infectious get care, even before they themselves are aware of it, and isolate ▶

**Continued from page 41**

them from other community members, who can then continue their activities.

In addition to this superpower, the monitors are used across North America with unique genetic “tracers”, which we developed in 2020. By dispersing the tracers into indoor air, and measuring their uptake with the monitors, we can deliver the first high-resolution image of exactly how bioaerosols travel in every corner of an office, institution, restaurant, gym or school. Our biosafety imaging reveals how ventilation, filtration and other safety measures are working, what needs attention and where our monitors can best mitigate the risks of exposure. The data and insights we provide have been used to rebalance and optimise real systems in real buildings, all in the efforts of protecting real people around the clock.

The monitors are also being used to scan for more than 1,000 other pathogens beyond SARS-CoV-2. Some are viruses that matter in immediate terms, like the flu or bacteria, like MRSA.

Others may just point to the presence of mould or pests that require attention over time. Building managers have used these much like a medical “check-up” to gauge the overall health of the building.

Our paired services have transformed the way customers and partners think about and manage the risk of infection. Across North America, customers now approach biosafety like they do fire safety: rigorous inspection to minimise the effects of a problem, and rapid response when a problem is detected.

Many governments in the Middle East have done remarkable jobs in setting out to protect their people. But anyone working in MEP knows that the role they play is likely to have greater consequences than a policy or mandate.

We have gathered the finest talent at the intersections between building engineering and biotechnology, including a deep scientific bench. Our international advisory board has some of the best scientific and technical minds in the fields of the microbiology of the built-environment, metagenomics, infectious disease and public health.

In the Middle East, we have met some of the most extraordinary MEP professionals, who are concerned not just with conventional models of efficiency but also about the key role they play in protecting communities and restoring confidence about indoor spaces.

In the breadth of their markets and the depth of their concerns, we have found extraordinary partners here, and look forward to meeting more in 2022.

Indoor spaces can be transformed from infection risks into protective environments. It starts with being able to understand how those indoor environments are performing, in revolutionary quantitative terms. It ends with the new forms of vigilance that the monitors provide. In the middle, as always, are the invisible science and art of conscientious MEP professionals. [ccme](#)

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# ‘EER VALUES SET BY REGULATORS CAN ONLY BE REACHED BY APPLYING VFDS’

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**Rachid Assebbane**, Market Sector Manager, A/C & Commercial Refrigeration, BITZER, in conversation with **Surendar Balakrishnan** of *Climate Control Middle East*...



**With demand control ventilation being seen as a viable solution to improve Indoor Air Quality, are we seeing an uptick in sales of VFDs across multiple building profiles, or has the pandemic done little to stir up the need for greater IAQ in the GCC region?**

The Middle East, especially the GCC region countries, are strongly looking for intelligent and highly efficient solutions that serve the comfort demands as well as the need to reduce energy costs. Consequently, the demand for VFDs has increased considerably, similar to the demand for controlled ventilation even before the pandemic.

COVID-19 has certainly emphasised the role of the HVAC system in providing healthy and safe indoor environment, which indirectly also supports growing sales of VFDs; and there is no doubt that IAQ will contribute to pleasant feeling in the indoor areas. With the right proportion of air leaving and outside air entering, it could have an effect on limiting the spread of COVID-19 disease to a certain extent.

Finding the right air proportion goes hand in hand with demand control ventilation. VFDs play an important role here in the ventilation system to reach the required efficiency and precision level of required air flows. In the GCC region, the demand varies throughout the year. In the winter, the demand for cooled conditioned air is low, which is an opportunity to significantly minimise the energy costs by applying VFDs not only at the ventilation system but also at the chiller or VRF level at the compressor.

**Is the growing popularity of VRFs triggering a greater demand for VFDs, considering that they are an ideal fit to control the operating speed of the compressor in a VRF system to match the load, which helps in reducing energy use in part-load conditions?**

Cycling the compressors according to cooling demand is no longer an option – it's not energy efficient; and starting on the compressor frequently reduces the life of motor and the moving parts drastically. It's well known that a VRF system can only run efficiently if the compressors and fans are equipped

with VFDs. The ability to match the fan's motor/compressor load to system load makes such systems run efficiently at part load while providing a precise control and meeting the comfort demands.

Definity, VRF systems have contributed positively to VFD sales, but the growth rate in the GCC region market, compared to the rest of the world, is still slow; thus, the support in VFD sales through VRF is still limited. On the other hand, other sectors, like HVAC chillers, and other fields, like commercial and industrial refrigeration, are experiencing a faster growth of implementation of VFD technology.

**What is the market demand for drives across the GCC region?**

The regulations for energy efficient solutions are getting tougher across all the GCC region countries aiming to reduce energy consumption and indirectly reduce the generated greenhouse

load requirements. However, in order to efficiently use VFDs in existing systems, a closer look of all the components must be taken into account.

The opportunities in the market are huge, but the trend is still not meeting the expectations, as is the case in Europe. For sure, the retrofit projects executed with our VFDs are acting as a marketing tool for our brand and are helping us acquire new business with either new retrofit projects or new installations.

**Are we seeing greater demand for VFDs from the residential market?**

VFDs are nowadays required almost in all the applications, and in all the market sectors; the residential market is one of them. The authorities as well as building owners are seeking to reduce the energy bill and reduce the CO<sub>2</sub> footprint. The demand is clearly present not only for the residential market but also in commercial refrigeration and industrial refrigeration.

**With the help of the sensors connected to the VFD, measurements data logs are being saved and can be downloaded and analysed on a regular basis**

gases for more environmentally friendly buildings. In many new projects, the set EER values by the regulating authorities can only be reached by applying VFDs. The discussions with our customers, the HVAC manufacturers for planned projects in the GCC and Middle East regions also forecast a rising tendency.

**How strong is the trend of manufacturers of HVACR equipment incorporating VFDs in their systems, which does not necessitate retrofitting them? How has this opened the market for you as a manufacturer of drives?**

Retrofitting is a part of the HVAC manufacturer business – it brings not only energy saving to the system, but it also offers a very precise control of the compressor, fan or pump to meet the

**The pandemic revealed a new occupancy profile (lower occupancy) in the commercial real estate market. How is the trend shaping future thinking among building owners, in view of the possibility of future possible pandemics (building preparedness) or even the possible revival of lockdowns in case of further waves in the current pandemic?**

The use of VFDs has proven to be advantageous under normal conditions in the pre-pandemic time. That said, the paybacks compared to conventional fixed-speed applications, especially at low occupancy profiles during COVID 19 have made VFDs an essential component in the HVAC system.

The uncertainty of future similar lockdowns has made VFDs even more ▶



attractive for building owners to apply them. With the VFDs, facility managers have the possibility to ramp up and down the system within a big range – for example, from 15% to 100%, according to the cooling demand. The system can also operate continuously, providing a continuous and steady cooling unlike the traditional on/off cycling method.

**The VFD sector has seen greater use of electronic and controls technology. Are building owners enthusiastic about integrating smart VFDs in their facilities, given the fact that Indoor air quality is improved as controls respond to better control temperature, humidity, pressure and carbon dioxide levels in buildings?**

A long time ago, well-known VFD manufacturers recognised the importance of using intelligent VFDs that not only control the motor speed according to the load to achieve optimum energy efficiency but also offer a monitoring of important parameters by processing the signals from the several sensors installed in the building to help keep a precise control of the room temperature and a better IAQ. Nevertheless, we do still see the need to make the owners more aware about the possibility of integrating smart VFDs in their facilities with the support of our direct customers, the OEMs, the contractors and the distributors.

**There is talk of doubling the use of VFDs as smart sensors in HVACR applications. How is this helping in predictive maintenance and condition-based monitoring?**

Reliable operation of the system and durable components are nowadays a necessity in the HVACR industry. With the help of the sensors connected to the VFD, measurements data logs are being saved and can be downloaded and analysed on a regular basis.

**Has the reduction in cost of VFDs encouraged building owners to opt for them? How successful have you been in highlighting the benefits of VFDs to building owners, such as reduced startup shock and smoother changes in fan speed and, further, reduced maintenance through lower wear and tear, which increases the life of the fan motor?**


With the sales volume increasing, the production costs reduce, and thus, the price of VFD systems become more competitive for the building owners. We do have calculation tools that compare traditional fixed-speed systems with the variable-speed systems in terms of energy cost savings, which in turn shows the high ROI over a shorter period; this is, of course, the most important selling point of the VFDs that the end user should clearly understand. These comparisons are based on big amount

of data collected from the field over the years. We do offer trainings, as well, to our customers showing all the benefits from the reduced inrush current to the smoother and continuous operation, which both help in extending the lifetime of the moving parts and the winding of the motors. Continuous monitoring of the operation of the compressor or fan or any other component run by the VFD enables the operator to act in a preventive way and repair components or, for example, adjust system/component settings before a damage occurs to the system.

**Have owners budged on realising that the initial cost of a drive is only about 10% of the total cost of ownership?**

Almost all owners have understood there is ROI when using VFDs after only a few years; however; not all of them are aware of the low initial cost to be invested versus the total cost of ownership. There is still a lot of education work to be done at the owner's level. We do rely on the HVAC OEMs and contractors to support us in forwarding our message to the end-users, the developers and the consultants about the clear contribution of VFDs in reducing the energy bills and, thus, also the carbon footprint by making a small initial investment.

**Would you say we still have numerous instances of uncommissioned VFDs, which are as good as not installing VFDs, in the first place? Are you seeing a shift in market behaviour towards proper commissioning, or is there still frustration over not getting the maximum out of the drives?**

Such issues are no longer existent in our market. We are delighted by the increasing positive response of the successfully commissioned VFDs in the field. The operators are nowadays well trained to fully use all the VFDs functions, and if it's not the case we, as a company, do support with the commissioning onsite with specialised engineers. We do have commissioning packages that meet such demands. 



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## JLL: MEA construction market dynamic despite global price pressures

### JLL releases its Q1 2022 MEA Market Intelligence Update

By CCME Content Team



Gary Tracey



**G**ROWTH in construction output continued to accelerate in the MEA region in the first quarter of 2022, in the face of pressures on material costs and labour, according to the latest quarterly Market Intelligence Update for the region from JLL.

“Last year, global construction output rose by 4.1%, driven by economic uncertainty stemming from the COVID-19 pandemic,” said Gary Tracey, Head of Cost Management, Project & Development Services, MEA. “In the MEA region, this trend has continued into 2022, driven by government vision programmes and a busy projects market, with the forecast 2022 tender price indices for KSA and the UAE at 6-8% and 4-6%, respectively.”

This increased construction momentum is in spite of the convergence of a number of economic factors in the first quarter of this year, which put inflationary pressure on material prices, JLL said. These factors included rising

oil and metal prices, exacerbated by geo-political tensions, alongside growing demand for – and shortages of – some materials, it added.

In 2021, the average OPEC oil price was USD 70/barrel. In the first quarter of 2022, this jumped to USD 98/barrel, JLL said. Emirates NBD Research has forecast an average price of USD 112/barrel over 2022, pricing in ongoing geo-political tensions and the possibility of shortages and physical disruption of supplies, it added.

Higher oil prices have a direct impact on construction material prices, due to the increased cost of production, manufacturing and transportation, JLL said. Over Q1 2022, to give just one regional example, the supply price of steel rebar increased in the UAE, Egypt and Saudi Arabia by 27%, 17% and nine per cent, respectively, it said. Meanwhile, regional demand for steel is forecast to increase by 4.9% in 2022, to 50.5 million tonnes, it said. With growth in steel

demand anticipated to outstrip growth in production around the world this year, this upward trend in the price of steel looks set to continue, it added.

The supply price of other key construction materials, including copper, aluminium, iron ore and plastic, used in PVC tubing, all also increased around the world over the first quarter of the year, JLL pointed out. For materials where availability and supply remain limited on an ongoing basis, this may drive adoption of alternative construction solutions, an interesting side-effect of the current demand and supply situation that we will continue to monitor, it said.

Of the key markets in the region, Egypt is likely to be more susceptible to increasing material prices, due to the requirement from Egypt’s Central Bank for letters of credit to be issued for the import of goods, as well as the devaluation of the Egyptian pound, it said, adding that future quarterly updates will also track the TPI level for Egypt in order to better quantify this.



# Panasonic rebrands its Life Solutions Business

Company renames it as Panasonic Electric Works Middle East & Africa

By CCME Content Team



Eiji Ito

**PANASONIC** Life Solutions Middle East & Africa (PLSMEA), a division of Panasonic Marketing Middle East and Africa FZE (PMMAF) announced that it has changed its name to Panasonic Electric Works Middle East & Africa (PEWMEA), as of April 1, 2022.

Making the announcement through a Press release, dated May 22, the company said that with the name change, PEWMEA will focus on realising the vision to devote its resources and activities to elevate the quality of all kinds of spaces, with a special emphasis on smart energy systems and living solutions to support sustainable and smart living. PEWMEA, it said, will lead the regional Energy Systems Business Division, Lighting Business Division, Smart Energy System Business Division and Indoor Air Quality Business Division.

According to the company, PEWMEA has been offering living solutions and a wide array of products, such as wiring devices, LED lighting, solar systems, fire alarm systems, home and

building automation, ventilation fans, air treatment, air purifiers and air-moving solutions. Upon the company name change, PEWMEA will provide maximum satisfaction to the regional customers working together with partners utilising digital technologies revolving around electrical works in all kinds of “living spaces” that make up society, including housing, offices, hotels, commercial facilities and sports facilities, the company said.

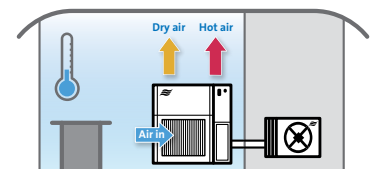
Announcing the rebranding, Eiji Ito, Managing Director, said: “With solutions centered on electrical equipment and digital technology, we hope to provide a safe and comfortable space where everyone can spend a healthy and lively time. We will continue to update the space following changes in the social environment and lifestyle, and always deliver maximum satisfaction to our customers. With this sentiment, we will continue to work together with our partners to provide ‘human-oriented solutions’ that enable our customers to live their best.”



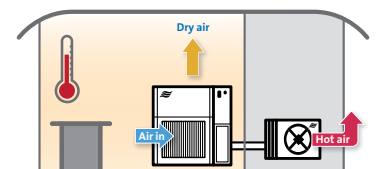
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# UAE ranks first for greatest increase in renewable energy capacity since 2011

Green Fuel Index places Saudi Arabia second in the list

By CCME Content Team

**N**EW research reveals that the United Arab Emirates has seen the 1st greatest increase in renewable capacity since 2011.

The study by Compare the Market Australia analysed each developed country's renewable energy capacity between 2011 and 2020, to reveal the countries with the greatest overall increases. The full report is available at: <https://www.comparethemarket.com.au/energy/features/2022-green-fuel-index/>

The nation that has seen its use of renewable energy increase the most is the United Arab Emirates, where renewable capacity has grown by almost 20,000% over the last decade, the report said. The UAE has traditionally relied on its plentiful supplies of oil but has recently made a big effort to shift away from fossil fuels, although just 7.2% of the country's energy needs are met by renewable means, the report said.

According to the report, Saudi Arabia ranks second, another country that has had a strong reliance on oil for its energy needs. Saudi Arabia however has been pushing towards more renewable alternatives with an increase

of over 13,000% in the last 10 years, the report said.

According to the report, the countries with the largest increase in renewable capacity since 2011 are:

Rank	Country	Capacity (MW) 2011	Capacity (MW) 2020	Capacity (MW) 10 Year Growth
1	United Arab Emirates	13	2,540	19438.5%
2	Saudi Arabia	3	413	13666.7%
3	Barbados	1	50	4900.0%
4	Malta	8	189	2262.5%
5	Bahrain	1	10	900.0%
6	Israel	219	1,501	585.4%
7	South Korea	3,322	19,589	489.7%
8	Netherlands	3,193	17,678	453.6%
9	Singapore	133	549	312.8%
10	Poland	3,019	12,220	304.8%

The Caribbean country of Barbados comes in third place, having increased its renewable energy capacity by 4,900%, the report said.

Each of the nations that have increased their renewable capacity the most are those that have developed renewable sources

comparatively late to the rest of the world, the report said.

The report listed further insights:

- The country with the highest renewable energy capacity is Iceland, producing 7,830 MW for every million people.
- The country where renewable energy makes up the greatest share of total electricity capacity is Norway, at 97.4%.

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# 'Emirates Safety Laboratory a great initiative'

Atam Hayat of Sharjah-headquartered Central Ventilation Systems says the laboratory will facilitate testing, inspection and certification for manufacturers of active and passive fire protection solutions

By CCME Content Team

**T**HE launch of the commercial operations of the Emirates Safety Laboratory by the General Directorate of Civil Defence in Dubai is a great initiative, said Atam Hayat, Regional Sales & Marketing Manager, Central Ventilation Systems.

In early April, the General Directorate announced the launch, following the successful completion of its operational trials. According to the Directorate, ESL uses the latest cutting-edge technology and best-in-class processes to ensure equipment used in construction comply with the high standards set in Dubai. The ESL Laboratory and Certification, which has obtained international accreditation, will be the

official authority to issue completion and compliance certificates for safety products in Dubai, the Directorate said.

At the time of the launch, the Directorate said ESL will work to further enhance fire safety in Dubai and contribute to the Dubai Clean Energy Strategy 2050, which aims to transform the emirate into a global centre for clean and renewable energy by 2050.

Commenting further on the ESL, Hayat said the presence of a local testing laboratory will facilitate the testing, inspection and certification for manufacturers and suppliers of active and passive fire protection products, devices and systems, locally. "Also, having a local, state-of-the-art testing and certification facility will be cost-effective," Hayat said. "It will also



Atam Hayat

guarantee zero compromise on products and materials integrity. Gone are those days when companies had to queue to get a free slot at international labs to get their products tested."

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# Empower raises the DC capacity of Business Bay district to 185,000 RT with its fourth plant

Ahmad bin Shafar: Empower's plants are role models for the global District Cooling industry

By CCME Content Team

**E**MIRATES Central Cooling Systems Corporation (Empower), the world's largest District Cooling services provider, announced the commencement of full swing operation of its fourth district cooling plant in Business Bay region, Dubai. The company stated that the total production capacity of the new plant has reached 50,000 refrigeration tons (RT), bringing the total capacity of Empower's Business Bay district cooling project to more than 185,000 RT.

The inception of the fourth plant is part of Empower's strategy to meet the increasing demand for company's environmentally friendly District Cooling services, and reflects its keenness to provide high quality cooling services to the corporate and individual customers in the Business Bay region, which is witnessing a high growth in population density. The number of companies that are rushing to take their headquarters in this dynamic region is increasing due to its vitality and the entry of new quality projects into the market, including the 'The Residences Dorchester Collection Dubai', the 'Lana Hotel' and other major projects, most notably the 'SLS Dubai Hotel and Apartments', the 'Paramount Hotel Dubai' and many others.

Ahmad bin Shafar, CEO of Empower, said: "The fourth District Cooling plant in Business Bay represents company's latest achievement in the development and innovation of the District Cooling sector, as it follows leading standards that contribute to reducing energy consumption for cooling operations. It also adopts sustainable methodologies in the use of treated wastewater, and applies a standard distribution technology that ensure high reliable service, which together strengthen our pioneering position in keeping pace with the standards of leadership in energy and environmental design for our plants."

He added: "We effectively seek to introduce new technologies in implementation of the directives of His Highness Sheikh Mohammed bin Rashid Al Maktoum, Vice President and Prime Minister of the UAE and Ruler of Dubai, that aim to reduce the electricity and water consumption, and make the emirate a global hub for the green economy, a city with the lowest carbon footprint in the world by 2050, and in line with the Dubai government's strategies with regard to environmental sustainability."



Ahmad bin Shafar

Bin Shafar pointed out that the company, in the new plant, as in the rest of its plants, leverages advanced technologies in its operations, including Thermal Energy Storage (TES) systems, which contributes to reducing load on state power grid during peak hours. In addition to artificial intelligence applications and weather forecast data analysis, the company utilizes Treated Sewage Effluent (TSE) technology in the plant's operations with the aim of reducing fresh water consumption and preserving natural resources for future generations.

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## Midea conference highlights its V8 VRF system

China-headquartered company says it chose Dubai for global launch of the technology, citing it as the best place to demonstrate the toughness of the system in facing up to high-ambient conditions

By Surendar Balakrishnan | Editor, *Climate Control Middle East*



Tariq Al Ghussein speaking during the launch ceremony

**M**IDEA launched the VRF V8 series as a major global initiative, citing Dubai as the best place to demonstrate the toughness and reliability of the system in facing up to sandy and dusty conditions and to high relative humidity and high temperatures. It said the V8 can work in temperatures ranging from 55 degrees C to minus 30 degrees C, making it ideal for operations in the UAE and Saudi Arabia, characterised by high temperatures, including higher ground temperatures.

Henry Cheng, General Manager, Midea Building Technologies, said the V8, which will go into production this month, is about reliability. “We want the product to be more reliable, so there is no need to repair it or spend that much time on maintenance,” he said. He spoke of the V8 having innovative features, including its shield box, which protects the incorporated printer circuit board (PCB) from

getting affected by the outside environment, including sand, dust and moisture. “Water will damage the PCB, if it touches,” he said. “The PCB is in an isolated space, and no water will touch it. So, it can work safely for a longer time.”

Speaking on the other features, Cheng highlighted the V8’s hyperlink approach to connecting the wires. Elaborating on how in the past, installers had to connect the wires in series, he highlighted the inherent disadvantage of that approach, where if one unit stopped working, the entire system would stop working. The V8, he said, allows for the wires to be connected with greater flexibility, which improves reliability, eases the installation process and helps installers save time.

A third feature of the V8, he said, is the high degree of comfort it allows through its constant airflow. “No matter where you are in the building, the airflow is constant,” he said.

Cheng also spoke of the V8 having 19 sensors and a visual sensor technology. If the real sensors stop working, the machine will duplicate to give virtual sensors – digital twin – which will continue the sensing process and simultaneously send a message to the maintenance personnel informing them of a problem with the real sensors for them to rectify. “This way, the system is able to work 24x7, so there is no shut down problem,” he said. He also spoke of the V8 featuring the ‘Midea Doctor 2.0, which would allow for using cloud for self-diagnosis. “So, with the V8, we have many leading technologies in the industry,” he said. “With the V8, we are the leader in the product.”

Addressing the issue of aftersales service, Cheng said Midea works closely with its partners, including Taqeef, which he added has a strong aftersales capability, including training and service centres. “We

also support our partners in increasing their aftersales service,” he said. “We have our technical engineers to support Taqeef, and we provide funds to partners to improve their service capability. As Midea we also have the TSP feature, and so partners can place orders for spare parts through the TSP and also through the cloud. So, we are enhancing our capabilities on aftersales. But, if we have a highly reliable product, you don’t need as much aftersales. We use high-end components, so we have fewer problems, and we would need less aftersales service.”

Cheng said Midea would continue to invest in the GCC region. But when asked if the company has plans to open a factory in the Middle East, he said it does not have any at the moment. “We have to look at the right partners and at the policies from the government,” he said. “We have had a discussion on this with the Abu Dhabi Investment Office.

Tariq Al Ghusein, CEO, Taqeef, speaking on Midea’s global growth, said that the very fact that the company has changed its name from Midea CAC to Midea Building Technologies reflects its ambition to provide comprehensive solutions to the building construction industry, including HVAC and elevators, to name two. “They want to supply all the components and software,” he said. “They continue to surprise us with how fast they are moving.”

The V8 features the refrigerant, R-410a, whereas it has R-32 for mini VRF systems. To a question about the possible use of refrigerants other than the two, considering that R-410a has a GWP of 2,088 and is facing calls from certain quarters for its phaseout and that R32 is classified as an A2L refrigerant, owing to its mildly flammable nature, requiring safety in handling, Cheng said Midea is one of the biggest manufacturers in the world and

that the company is looking at all possibilities and will need to see the trend. “Different manufacturers are promoting different gases, and there are debates on regulation,” he said. “We will be ready once there is clarity.”

To a question about the global semiconductor crisis, and Midea’s response to dealing with the problem, Cheng said the shortage of chips is a global problem and one that affects all sectors and not just the HVACR sector. “From our perspective, we have learnt that we have to develop strategic partners on key components and to also strengthen our own capability,” he said. “And in China, we have set up our own chip factories in a small scale, and now we are accelerating to a big scale. We will enhance our capability in this area. There are many newcomers, who are planning to manufacture chips, and I think the problem will be solved very soon.”

## Eurovent Middle East announces HVACR Next Generation event

Association invites government and industry executives to its fifth anniversary congress

By CCME Content Team

**H**VACR industry association, Eurovent Middle East has announced its fifth anniversary congress, titled ‘HVACR Next Generation: Rethinking policies and strategies’, scheduled to take place on September 13 and 14 at LeMeridien Dubai Hotel and Conference Centre. Making the announcement through a Press release, Eurovent said government representatives, authorities and industry executives will exchange views on the most pressing issues of the industry, and discuss policies and strategies for the next decade.

According to Eurovent, the event is supported by United Nations Environment Programme (UNEP), the Abu Dhabi Department of Energy, Abu Dhabi Quality and Conformity Council and REEM (the

Ras Al Khaimah Energy Efficiency and Renewables Team). It will include key presentations from industry experts, the Gulf Standardization Organisation, Eurovent Certita Certification and Underwriters Laboratories and will host interactive workshops designed for regulatory bodies and industry representatives on transition to seasonal efficiency standards and market surveillance, Eurovent said.

According to Eurovent, the main topics of the congress will focus on energy efficiency, the transition to low-GWP refrigerants, Indoor Air Quality and technological advancements expected in the coming years. Experts from the industry will elaborate on policies and strategies to manage these challenges in the next decades, Eurovent said. Given the importance of ventilation, cooling and refrigeration to the region’s development

and prosperity, the event will underline that it needs the joint effort of all stakeholders to ensure a sustainable and healthy future for all, Eurovent added.

Tariq Al Ghusein, President, Eurovent Middle East, said: “The industry and our societies are living in a transforming world. We not only have to cope with an ever more digital society, but also with an environment heavily impacted by climate change. The question is, do we have the technology, the regulatory framework, and – perhaps even more important – do we have the skill sets needed to cope with these changes? We would like to use the occasion of our five years anniversary to take a closer look into these questions together with governments and industry stakeholders.”

The association said it further expects some major announcements to be made during the event, which would have an impact on the region’s industry, details of which will not be disclosed before. It added that the congress will be open for government and industry representatives from executive levels only. Interested participants, it further added, can request an invitation by pre-registering on the association’s website.

## AHRI MENA, ASHRAE RAL Energy Efficiency Webinar recording now available

Spotlight is on raising the bar on energy efficiency in high-ambient temperature regions

By CCME Content Team

**A**HRI MENA said a recording of the May 18 AHRI MENA, ASHRAE RAL Energy Efficiency Webinar is available for public viewing. AHRI (The Air-conditioning, Heating, and Refrigeration Institute) and the ASHRAE Region-At-Large (RAL) Chapter conducted the webinar, titled Raising the Bar of Energy Efficiency in High Ambient Temperature Regions.

With more countries in the Middle East and North Africa (MENA) region facing mounting environmental challenges, the webinar provided attendees with insight into regulations, energy performance standards, and building codes aimed at improving energy efficiency and supporting ambitious green targets, AHRI MENA said.

Khalil Issa, AHRI MENA Executive Director and Nabil Shahin, Technical Director, discussed key drivers for facilitating compliance with minimum energy performance standards (MEPS) and green building codes, principally the AHRI Performance Certification Program, which uses independent, third-party testing to accomplish that goal.

ASHRAE representatives, Richie Mittal and Dr Samir Traboulsi discussed global and regional regulatory and energy efficiency issues and introduced ANSI/ASHRAE/IES Standard 90.1. Considered the gold standard for energy efficiency, Standard 90.1 was examined in terms of its structure and compliance mechanisms in the context of ASHRAE 189.1 and the International Green Construction Code standards.

“With AHRI’s product performance



Khalil Issa

and rating standards being intrinsically referenced in green building codes and ASHRAE 90.1, only AHRI certification allows the proper verification of equipment efficiency and serves as the best path for regulatory code and MEPS compliance,” Issa said.

## Samsung launches AC MENA Training Academy

Facility will feature a showroom and the company’s proprietary WindFree Experience Booth

By CCME Content Team

**S**AMSUNG Electronics announced the launch of the first-of-its-kind MENA Training Academy, which the company said seeks to enable customers to experience its innovative air solutions.

According to Samsung, the new facility will feature a showroom and a WindFree™ Experience Booth, through which customers can experience the unique technology, the low airspeed and cold draft-free operation of the unit, resulting from thousands of micro holes in the unit’s panel, leaving customers with a pleasant experience. Moreover, customers will be briefed on how to control the air conditioning unit via the SmartThings app, where they will be able to try it through their mobiles, Samsung said.

According to Samsung, the showroom will boast the new generation of DVM,



including the DVM S2, which is compatible with the WindFree™ wall-mounted models, 1Way cassette, 4Way cassette, as well as the 360-cassette.

In his comments, Okan Tutcu, Head of AC, Samsung MENA Regional HQ, said: “We are pleased with the launch of the new training academy, through which we aim to share our expertise and the technological innovations with Samsung’s customer base. This initiative is a testament to our continuous efforts in promoting



Samsung’s latest air conditioning products and systems.”

According to Samsung, the academy will also conduct training sessions by air conditioning professionals at Samsung MENA to highlight the comprehensive air conditioning line-up and innovative technologies, functionality, installation and control systems available at Samsung AC reference sites.

The training academy is located at Samsung MENA RHQ, in Dubai Media City.



## Empower reports achieving 21% growth in electronic transactions within 120 days

District cooling company says the transformation to digital channels aims at saving customers' time and effort to achieve the goals of the national strategies

By CCME Content Team

**E**MIRATES Central Cooling Systems Corporation (Empower) reported recording a remarkable growth of 21% in electronic transactions performed by its individual and corporate customers during the first four months of 2022, compared to the same period of last year. Making the announcement through a Press release, Empower said the significant increase in electronic transactions reflects the company's continued success in recording higher growth rates up to the end of the year, exceeding the 44.5% growth recorded between 2020 and 2021.

Ahmad bin Shafar, CEO, Empower, said: "The automation process of our operations, including customers' applications to obtain our services, is driven by the company's constant endeavor to simplify the procedures for obtaining the service in a way that ensure

easy access to high quality District Cooling services and customer happiness. The transformation to digital channels also aims at saving customers' time and effort to achieve the goals of the national strategies and keeping pace with the technological developments that Dubai witnesses."

Bin Shafar stressed Empower's commitment to actively contribute to the implementation of the 'Dubai Paperless Strategy' through several practices and measures, including increasing e-payment channels. "In order to smoothen the completion of various transactions and achieve absolute satisfaction for our customers, we are always keen to provide easy and quality services that are consistent with the goals of national strategies," Bin Shafar said.

Empower said it provides various services through its website, including online reviewing and payment of bills, obtaining electronic receipts upon



Ahmad bin Shafar

payment, making final settlement, paying all dues and obtaining clearance certificates. Those services, it said, can be obtained hassle-free, while keeping customers updated on the status of the application until they receive the final bill and clearance certificate. The company said it also provides options to complete the payments through mobile phone Applications, including 'Dubai Now' app and UAE Central Bank's Payment Gateway System, in addition to the e-services provided by its strategic partners, including banks and financial institutions such as Emirates NBD Bank, Al Ansari Exchange and Abu Dhabi Commercial Bank.

## Condair appoints new BDM for Saudi Arabia

Humidity control company says Shadi Abdulrahim will be responsible for expanding sales of its solutions across the region

By CCME Content Team

**H**UMIDITY control and evaporative cooling company, Condair has appointed Shadi Abdulrahim as its new Business Development Manager for Saudi Arabia. Making the announcement through a Press release, Condair said Shadi has joined Condair as an experienced sales manager in the engineering and construction sectors. Based in Riyadh, he has taken on the responsibility for expanding sales of Condair's humidifiers, dehumidifiers and evaporative cooling systems across the region, the company added.

Mahmoud Widyen, General Manager, Condair Middle East, said: "We are delighted to be welcoming such an

experienced business development manager to our team. For many years, Condair has operated successfully across Saudi through its distributor partners and will continue to do so. This investment in the region will further support and grow sales, and it is an indication of the potential we see in the Saudi market."

Abdulrahim said: "Condair is a global leader in humidifiers, dehumidifiers and evaporative cooling technologies. I feel very proud to have been given this opportunity to lead Condair's operations in the region and expand the company's sales. There has never been a more important time to be working in the building services sector and a greater need to improve our Indoor Air Quality for the benefit of society. Condair's



Shadi Abdulrahim

products offer enhanced health to building occupants through mitigating airborne viral transmission, as well as improved productivity to manufacturers. I am sure that the comprehensive product range Condair has and the technical expertise from my previous roles will help in achieving our company's expectations and targets."

# Abu Dhabi's sustainability goals in the spotlight at Retrofit Tech Abu Dhabi

Abu Dhabi Summit sees keynote speeches from Abu Dhabi Department of Energy and Abu Dhabi Energy Services

By CCME Content Team

**D**AY 1 of the second edition of Retrofit Tech Abu Dhabi Summit hosted over 200 high-level decision makers from the energy efficiency, sustainability and retrofitting sectors, according to Advanced Conferences & Meetings (ACM), the organisers of the event.

The two-day summit, hosted by the Abu Dhabi Department of Energy and co-hosted by Abu Dhabi Energy Services (ADES), a subsidiary of TAQA Group, is taking place under the theme of unleashing Abu Dhabi's sustainability potential through retrofitting existing buildings, implementing energy efficiency initiatives and renewable energy integration, in line with the UAE Net Zero by 2050 strategic initiative, ACM said.

Proceedings opened with discussions on the theme of energy efficiency and retrofitting strategies for achieving Abu Dhabi's energy goals. This included keynote speeches from Mohamed Al Hadhrami, Energy & Water Efficiency Accelerators Directorate, Abu Dhabi Department of Energy, and Khalid Al Qubaisi, Chief Executive Officer, ADES.

Al Hadhrami spoke about the Abu Dhabi Demand Side Management and Energy Rationalisation Strategy 2030, which targets a 22% reduction in electricity consumption and a 32% reduction in water consumption by 2030. "The Retrofit Tech Abu Dhabi Summit returns for a 2nd edition, giving all entities involved an opportunity to look back at the milestones we have achieved and discuss the way forward," he said. "Building Retrofits is one of the key programmes under the Abu Dhabi Demand Side Management and Energy Rationalisation Strategy 2030, where the goal is to activate the government Building Retrofit Programme and the private ESCO market to achieve an overall building consumption reduction of electricity (30%) and water



A view of the exhibition area



Khalid Al Qubaisi

(five per cent) through the adoption of energy/water conservation measures.

"With clear environmental and efficiency objectives in mind, the DoE is constantly looking to collaborate with partners from across the energy and water sectors, among others, to implement these goals, in line with the emirate's vision and the UAE Net Zero by 2050 initiative. Such efforts, combined with strategic partnerships with key government entities and private-sector stakeholders, will help establish and grow a local market for energy efficiency services, allowing us to fulfil our mandate to spearhead the green transition in Abu Dhabi, and enhance the energy and water sector's contribution to the emirate and the country's sustainable economic development."

In his keynote presentation, Al Qubaisi highlighted the progress made by ADES in terms of active projects in the implementation phase. He said: "The increasing demand for efficient energy consumption in existing buildings has put us in the perfect spot – to connect building owners in the government and private sector with energy services companies (ESCOs) by funding and overseeing energy efficiency projects in Abu Dhabi.

"In alignment with the Abu Dhabi Department of Energy, today we released the RFP for retrofitting over 30 government buildings – a key milestone aiming to improve consumption

efficiency and reduce the carbon footprint of these buildings. The project will increase the number of buildings to be retrofitted by ADES to more than 60, and further cement our position as the energy services market maker and a catalyst for the building retrofits program in the Emirate, in line with Abu Dhabi's Demand Side Management and Energy Rationalisation Strategy 2030."

Later in the morning, representatives from Abu Dhabi Quality & Conformity Council (AD QCC) and Provis joined key stakeholders from the DOE and ADES in an executive panel discussion, focused on making Abu Dhabi's energy visions a reality. The discussion gave insights into the role each stakeholder is playing in achieving Abu Dhabi's energy efficiency goals and discussed avenues for collaboration and involvement of the private sector, ESCOs and consultants to ensure the goals are met.

Discussions on lighting and HVACR retrofits and net-zero-energy buildings rounded out the busy first day of the conference programme.

According to ACM, the Summit's Lead Sponsors were Teknoware and Netix, with other technology and solution providers – including Siemens, Knauf, Farnek, Green Optima, Belimo, Nashwan, DC Serve, Zoho IoT, Ledvance, Daikin, Facilio, Johnson Controls, Enova, KEO and Engie – supporting the initiative.

# Farnek speaks at Retrofit Tech Abu Dhabi Summit

The company's Sustainability Specialist highlights the need for looking at regenerative design rather than retrofitting

By CCME Content Team

**NADIA** Ibrahim, Associate Director - Consultancy & Sustainability at smart and green facilities management (FM) company, Farnek, spoke of the need for looking at regenerative design, on Day 1 of the second edition of Retrofit Tech Abu Dhabi Summit, on June 1.

Participating in a panel discussion, titled Net-Zero Energy Projects - Challenges, Opportunities and the Realities, Ibrahim spoke on how best to achieve the UAE capital's Net Zero ambitions through retrofitting existing buildings. "Looking at the big picture, Net Zero is a tool to stabilise climate change, through the significant reduction of carbon emissions," she said. "I like to use the term, 'Regenerative Design' rather than retrofitting. What we need are designs that focus on reducing carbon emissions, rather than those which merely emphasise energy and cost savings alone."

Ibrahim went on to describe a strategic approach, including the overall assessment of buildings using advanced modelling tools, the differing levels of refurbishment, the renewable energy component and the increased awareness and use of digital tools, such as the HITEK solution, which integrates with Building Management Systems (BMS) to identify, design and focus on reducing carbon emissions through energy reduction and materials management.

However, Ibrahim also acknowledged the challenges faced when trying to execute a retrofitting project. "One barrier is commonly referred to as the 'split incentive'," she said. "This is where the landlord is responsible for the capital expenditure to make the efficiency improvements, but the tenant is the one who is likely to benefit from lower energy



*Nadia Ibrahim speaking at the Retrofit Tech Abu Dhabi Summit*

bills. Overcoming this barrier through both regulatory and voluntary measures will be key to making progress on this front.

"Inadequate financial support is also holding back energy efficiency and green government initiatives. Most buildings are privately owned, but local developers and investors are reluctant to commit to the initial capital expense, because risk-averse banks are unlikely to offer financial backing for what is still a relatively new process.

"UAE banks should develop risk analysis mechanisms to measure the potential for lending to this market, and energy services companies (ESCOs) should raise awareness within the financial community and try to complete as many projects as possible to establish a track record. Banks could also create energy efficiency funds, while investors should be encouraged to take a longer-term view of the returns, which in some cases can continue for up to 30 years."

In terms of other solutions, Ibrahim suggested that government incentives would be key to unlocking and accelerating retrofitting projects, such as rebates, subsidies and, in the near future, tax credits.

The event, at the Conrad Hotel, in Abu Dhabi's Etihad Towers, attracted over 300 delegates. Co-hosted by Abu Dhabi Energy Services (ADES), it brought together key stakeholders across the energy efficiency, sustainability and retrofitting sectors, to help achieve Abu Dhabi's energy goals.

Moderated by Hassan Younes, Co-CEO and Founder, GRFN, the event saw participation from Majid Ideisian, Project Manager, Financial Sustainability and Investment Department, UAE Ministry of Energy and Infrastructure; Mohamed Al Hadhrami, Energy & Water Efficiency Accelerators Directorate, Abu Dhabi Department of Energy; and Amer Bin Ahmed, Managing Director, Knauf Middle East.

The UAE has already committed to Net Zero by 2050 and will host COP28 in 2023. Abu Dhabi also has progressive plans, such as the Demand Side Management and Energy Rationalization Strategy 2030, which will initiate large-scale retrofitting and energy efficiency projects, for which sustainable design and energy efficient performance will be of paramount importance to achieving its Net Zero targets.

# World Leaders focus on climate change at Davos

## US Climate Envoy, John Kerry, unveils a USD 8.5 trillion market signal to commercialise zero-carbon technology

By CCME Content Team

**WORLD** leaders came together at the World Economic Forum Annual Meeting 2022 against a backdrop of deepening global frictions and fractures and a once-in-a-century pandemic.

Nature and climate were as much part of the discussions. The leaders said the energy crisis, exacerbated by the war in Ukraine, must not deepen the world's dependence on climate-warming fossil fuels. The week saw a focus on accelerating clean energy and climate solutions:

- More than 50 companies have now joined the First Movers Coalition, which was launched by US President Joe Biden and the World Economic Forum at COP26 to decarbonise the heavy industry and long-distance transport sectors – the sectors responsible for 30% of global emissions.
- John Kerry, the United States Special Presidential Envoy for Climate, joined these companies in sending a powerful market signal to commercialise zero-carbon technology. Their market cap represents about USD 8.5 trillion across five continents, and they are making unprecedented advance purchase commitments by 2030.
- Eight new countries have joined the First Movers Coalition as government partners – Denmark, India, Italy, Japan, Norway, Singapore, Sweden and the United Kingdom. All are committed to create early markets for clean technologies. Alongside the United States, there are nine committed government partners.
- Some 70+ CEOs of the CEO Climate



Leaders Alliance – the largest CEO-led climate action group, globally – agreed on taking bold action to translate pledges into tangible emission reductions in line with 1.5 degrees C. Covering 26 countries and 12 industries and representing 120 companies in total, the alliance has a combined annual emission footprint greater than India or the EU.

- CEOs agreed to push for progress on critical 2030 and 2050 global climate targets, mobilising dialogue between governments and the private sector to deliver a successful outcome at COP27 in Sharm el-Sheikh.
- China's Special Envoy for Climate Change, Xie Zhenhua announced his country's contribution to plant and conserve 70 billion trees by 2030. The World Economic Forum and China Green Foundation will undertake concrete measures together through

1t.org China Action to support the fulfilment of China's contribution.

- A new USD 15 million investment over five years was announced to support entrepreneurs who can drive innovation in freshwater resource management.
- CEOs also held dialogues with regional climate envoys, COP26, COP27 and COP28 leadership to make progress on global climate policies, including the importance of setting a global price on carbon and other key policy measures to fast-track the transition.
- Youth activist, Elizabeth Watuthi spoke on Safeguarding our People and Planet, sharing the local perspective and direct impacts of climate change in vulnerable communities, and youth climate activist, Vanessa Nakate, speaking at the Staying on Course for Climate Action session, said: "When we talk about climate change we're

also talking about food security. It's really important to understand the intersections of this crisis."

- The Forum's Global New Mobility Coalition is launching the Urban Mobility Scorecards initiative. Over 30 companies, such as Visa, Hyundai, Uber, Volta Trucks and TIER, will work with policymakers from cities and regions to better understand challenges and solutions to create a shared, connected and decarbonised mobility ecosystem.
- A new Global Commission on the Economics of Water was launched to redefine the way we value and incorporate water into economic decision-making. It is led by Ngozi Okonjo-Iweala, Director-General of the World Trade Organization; Mariana Mazzucato, Founding Director of the UCL Institute for Innovation and Public Purpose; Tharman Shanmugaratnam, Senior Minister of the Government of Singapore;

and Johan Rockström, Director of the Potsdam Institute for Climate Impact Research.

In a closing address, Olaf Scholz, Chancellor of Germany, called for "a sustainable, resilient globalisation, which uses natural resources sparingly and, above all, takes the needs of future generations into account", adding that a new approach to globalisation would be "based on solidarity which benefits all citizens – in all parts of the world".

# GEA expands semi-hermetic product portfolio

The GEA CompaX 350 and 400 are set to be launched in this quarter

By CCME Content Team

**G**EA Heating & Refrigeration Technologies said it is expanding its semi-hermetic product portfolio, with two new screw compressor models – the GEA CompaX 350 and 400 – set to be launched in the second quarter of 2022. Making the announcement through a Press release, GEA said it is also launching the GEA Grasso X semi-hermetic screw compressor packages. For the BluX chiller, there will be major technical enhancements and adaptations for optimal implementation to the compressors, it said.

The two models, 350 and 400, with a flow volume of 321 and 372 m<sup>3</sup>/h (at 2,940 rpm), extend the semi-hermetic screw compressor series from larger to medium and also smaller capacity requirements, the company said. They combine best efficiencies by using the natural refrigerant, ammonia, a wide, stepless adjustable, variable internal volume ratio and a wide speed range as well as highest safety and reliability through decades of experience in developing screw compressors, the company claimed. The compact design and the simultaneously high degree of integration also make the CompaX a cost-efficient and space-saving product, the company further claimed.

In the introductory phase, the 350 and 400 models are available as both packages and chillers, the company said. The new Grasso X semi-hermetic

screw compressor packages offer maximum flexibility and efficiency with a minimum footprint and overall cost, the company said. Customers can choose between a single version and a multipackage. The multipackage can optionally be configured by the customer with two, three or four identical CompaX 350 or 400 units in parallel arrangement, the company added.

Combined with the wide speed range of each screw compressor, the Grasso X setup provides availability, redundancy and efficiencies at the highest level over nearly the entire full and part load range, the company claimed. Refrigeration capacities range from approximately 200 to 1,900 kW (NH<sub>3</sub>, -10/+35 °C), it added.

The existing BluX semi-hermetic chiller series is also extended by the new compressors, the company said. The BluX includes all the features and benefits of the unit. The proven, state-of-the-art heat exchanger set completes the product to a compact, highly efficient and safe plug-and-play solution, the company claimed. With refrigerant inlet and outlet temperatures of +12/+6 °C and condensing at ambient temperatures (+35 °C), the BluX capacity range extends from approximately 350 kW cooling capacity with 1x CompaX 350 at 3,000 rpm to circa 1,530 kW with 2x CompaX 400 at 6,000 rpm,



GEA Heating & Refrigeration Technologies is set to launch the CompaX 350 and 400 in the first quarter of 2022

the company said. Larger capacities are covered by the GEA BluX with the existing large CompaX 700 and 900 types, it added.

"The compact, safe and reliable products, in combination with their high efficiency, lead to reduced total costs and a most sustainable solution," said Ron Hoffmann, Product Manager for screw compressors, GEA. In addition, GEA systems require a minimum of maintenance. "We like to convince our customers with the performance and efficiency figures of our machines, Hoffmann said. "We are happy to bring over 50 years of expertise in the development and production of screw compressors to the market with our proven and new products."

# Eurovent's generation change reaches finish line

## Francesco Scuderi succeeds the retiring Felix Van Eyken as Secretary General of the HVACR association

By CCME Content Team

**F**RANCESCO Scuderi has succeeded the retiring Felix Van Eyken as Secretary General of Eurovent, the HVACR association said through a Press release. Stijn Renneboog will support him as the new Deputy Secretary General, the association added.

The European Industry Association for Indoor Climate (HVAC), Process Cooling and Food Cold Chain Technologies has been preparing for a generation change since its General Assembly 2017, which assigned Francesco Scuderi its Deputy Secretary General. Scuderi, an electric energy engineer, has been with the association since 2015, leading the cooling and refrigeration department and supporting the Secretary General with daily management, Eurovent said. Additionally, he serves as convenor at ISO and CEN Working Groups for standardisation activities related to commercial beverage coolers and ice cream freezers, Eurovent said.

With the upcoming retirement of Felix Van Eyken, Scuderi takes over the role of Secretary General effective immediately, Eurovent said, adding that Van Eyken will assume an advisory role and will support the Eurovent Secretariat on part-time basis until the end of July, when he retires definitively. Stijn Renneboog will support Scuderi as newly appointed Deputy Secretary General. He has been at Eurovent since 2019 and has been instrumental in structural reform of the association as well as strategic relations development.

Following his appointment, Scuderi said: "It is an honour for me to take on the leading role in Eurovent, the most renowned and respected



L-R: Felix Van Eyken, Stijn Renneboog and Francesco Scuderi

European stakeholder of our industry, while supporting the unity and advanced development of the European and international HVACR technologies. I thank the Eurovent Board and our members for their trust and support. The bar has been set high for this position, and I will make sure to follow the footsteps of Felix in the best possible way."

Van Eyken added: "I am proud to hand over the lead to Francesco, and I am confident that he will enjoy the same trust and respect that I have built up over the past decades among our industry and authorities. While I am emotional about leaving a career I am passionate about and industry colleagues I can call my friends, I am also excited for this new chapter in my life and the changes it will bring. I would like to thank the Eurovent

Team for their hard work throughout the years."

Renneboog said: "The past three years were transformational for Eurovent. Thanks to tremendous commitment and leadership across the Eurovent family, we are now better adapted than ever to represent the evolving needs of our industry and face the challenges and opportunities ahead. In that sense, today marks not only the end of an era, but also a beginning of sorts. I really look forward to this new chapter, and to building on the foundations that have been laid."

Eurovent said that in line with the ongoing modernisation and digitalisation of the association, it is also preparing major improvements regarding its corporate identity, website, social media presence and dissemination of information.

# EIA questions ASDA for opting for “climate-damaging AC systems”

Environmental Investigation Agency says UK supermarket chain has recently installed rooftop units with R-410A in them

By CCME Content Team

**W**HILE many supermarkets are increasingly opting for natural refrigerant cooling systems to reduce their overall emissions, UK-based ASDA has recently installed rooftop cooling units using a potent climate-harming refrigerant, the Environmental Investigation Agency (EIA) pointed out through a Press release.

The units using hydrofluorocarbon (HFC) refrigerant, R-410A have been installed, EIA said, at four of ASDA's largest superstores, including Patchway in Bristol. R-410A has a global warming potential (GWP) of 2,088, which means, tonne for tonne, it absorbs 2,088 times more energy and has a warming impact 2,088 times higher than CO<sub>2</sub>, EIA highlighted.

ASDA's initial announcement – covered by Cooling Post and based on a press release approved by ASDA, the air-con manufacturer and the supplier – indicated the four installations would be part of a rolling programme of equipment replacement across its UK estate of more than 600 stores, EIA said.

The product description on the website of manufacturer, CIAT states that R-410A is a “non-depleting refrigerant” and that the system is compatible with mid-GWP refrigerants, EIA said.

However, while R-410A is indeed not an ozone-depleting substance, it cannot be classified as a mid-GWP refrigerant, given its GWP is in the thousands, EIA said. Furthermore, the website lists “high energy efficiency and environmental responsibility” as one of this system's advantages, EIA said.

Sophie Geoghegan, Climate Campaigner, EIA, said, “R-410A is simply not an environmentally

responsible choice, even if paired with good energy efficiency.”

In recognition of their harmful climate impact, HFCs are being phased down internationally under the Kigali Amendment and, within the EU and the UK, under the EU and UK F-Gas Regulation, EIA said.

The F-Gas Regulation sets out phase-down steps in which the supply of HFCs is restricted based on their CO<sub>2</sub> equivalent, EIA said. Now in its sixth year, the F-Gas Regulation has spurred the move away from high-GWP HFCs such as R-410A and towards low-GWP HFCs and natural refrigerants in many sectors, EIA said.

This shift has been especially evident in the supermarket refrigeration sector, where the number of supermarkets using natural refrigerant transcritical CO<sub>2</sub> systems in the EU has risen from 140 in 2008 to 40,000+ today, according to figures from ATMOSphere, EIA said.

Geoghegan said: “Installing a new R-410A system, when natural refrigerant solutions are energy-efficient, cost-effective and available, runs counter to the phase-down and net-zero goals. Other UK supermarkets have opted for greener air-conditioning systems with either lower-GWP refrigerants or no refrigerants at all.”

EIA said that in 2016, Tesco began using refrigerant-free evaporative cooling systems at some locations, which are expected to lower energy use by 80%. Lidl, it said, has installed a CO<sub>2</sub> ground source heat pump, which is also used as a chiller for air-conditioning in a store in the Netherlands.

Propane or CO<sub>2</sub> chillers are other efficient and natural HVAC solutions, EIA said. Integrating HVAC into a CO<sub>2</sub> refrigeration system can also offer

opportunities for heat reclaim and, thus, substantial efficiency gains, EIA said. One Sainsbury's store has reported saving one million kilowatt hours in a year this way, it added.

According to EIA, an increasing number of supermarkets have made net-zero commitments in recent years, especially in the run up to the annual international climate conference (COP26), in November 2021.

On its website, ASDA states that its vision is to be an end-to-end, net-zero-carbon-emissions business, and commits to halving its direct greenhouse gas emissions by 2025, EIA said.

Geoghegan added: “It is hard to see how the company's new air-con installation is in line with this commitment, given the direct emissions that will result from its choice of R-410A. Its website also states that lighting, heating and cooling is one of the biggest operational impacts on climate, yet there is no mention of refrigerants – the sole focus is on electricity use.

“ASDA's choice of air-con system flies in the face of national commitments to phase down HFCs and net-zero commitments to reduce emissions, in line with the global goal of keeping warming below 1.5 degrees C. Future-proof, HFC-free cooling systems are available, and supermarkets have a responsibility to make better environmental choices and do their bit to help us all avoid climate catastrophe.”

EIA said ASDA subsequently told EIA that the installations at its four sites was a small-scale ‘trial of the technology’ and that it had no further plans to roll them out to any more of its sites. EIA, however, pointed out that the units have been in the market since 2019.

# LU-VE Group receives “Green Star” award

Company says it has been classified as “Leader of Sustainability 2022 by Statista

By CCME Content Team

**A**IR heat exchanger manufacturer, LU-VE Group said it has received two important awards that certify its commitment to projects and initiatives aimed at promoting increasingly sustainable and green development.

Making the announcement through a Press release, the Group said it received the “Green Star” award for the second consecutive year, excelling among the 300 companies that have distinguished themselves the most in the field of sustainability in Italy, according to research conducted by the ITQF Institute. The analysis, the Group said, was conducted independently on 2,000 Italian companies through the social listening technique, which, thanks to sophisticated software and artificial intelligence, has made it possible to collect over one million online citations on the green impact of

companies on the basis of 30 criteria, including ecological, economic and social sustainability, innovation and technology.

The Group said its strong orientation towards sustainability has also guaranteed it access to the classification, “Leader of Sustainability 2022”, a selection of the 200 Italian companies that have best managed to integrate conscious environmental, social and economic choices into their business practices. Conducted by Statista, the research took into consideration over 1,500 reports from companies operating in Italy, focusing on the three macro-areas of sustainability: environmental, social and corporate governance, the Group said.

“It’s the grey matter that matters most,” said Iginio Liberali, President, LU-VE, Group. “This does not refer only to the products, but it is the thought that guides us to keep the commitments undertaken towards our collaborators and



the communities in which we operate, to promote human growth, professional and otherwise. It is a principle that we have been applying for 36 years since our foundation. These awards make us very happy, because they underline that this is the right way to go. We are constantly engaged in the development of products and processes with low environmental impact, using technological innovation as a strategic lever and exporting our model also abroad. We have always done this, and it has allowed us to be competitive in the market and recognized as a reference player in our sector. Sustainability is not a cost but an investment and, as such, can no longer be neglected. Now ESG issues have become ‘fashionable’, but this approach is our duty: we owe it above all to future generations. For LU-VE Group, it is an essential principle, not a finishing line but a starting point.”

# Eurovent welcomes Filtech Swiss as its newest member

Manufacturer of air filtration solutions has offices in Switzerland, France and The Netherlands

By CCME Content Team

**E**UROVENT welcomed Filtech, a Swiss manufacturer of ventilation filters as its newest member.

Making the announcement through a Press release, Eurovent said that with Filtech becoming the newest Eurovent Corresponding Member, the association has grown in strength.

Founded in 1971, Filtech has production facilities in Switzerland, France and the Netherlands which manufacture and market high-quality air filters that protect people and processes, Eurovent said. Filtech’s products are

used in a wide range of applications and industries, such as HVAC, gas turbines, human and process protection, hospitals, clean rooms and domestic appliances, Eurovent said. Filtech’s application range includes high-quality FINE, HEPA and ULPA filters, which undergo testing on efficiency and pressure drop in high-tech laboratories, it added.

Speaking on the occasion, Luc Taeymans, Filtech Swiss Director, said: “Filtech Swiss is honoured to be part of Eurovent as a Corresponding Member. Our core purpose is ‘Air that must be as pure as possible’ to protect people



and their machines. By joining Eurovent as a Corresponding Member, this will be a huge opportunity to be part of a group that produces leading guidelines for HVAC professionals dealing with ventilation systems. This will aid in providing a clear picture on the necessity of having specific filters for improving and maintaining good indoor air quality.”



# ASHRAE announces technical program for Annual Conference

Safety protocol includes free onsite testing for return travel of international attendees

By CCME Content Team

**A**SHRAE has released its technical program and safety protocol for the 2022 ASHRAE Annual Conference, from June 25 to 29 at the Sheraton Centre Hotel, Toronto. According to ASHRAE, the full conference schedule is now available online and in the ASHRAE 365 app. Registration is open at [ashrae.org/2022annual](http://ashrae.org/2022annual), ASHRAE said.

Making the announcement through a Press release, ASHRAE said the five-day event includes eight conference tracks, over 80 sessions, tours, social experiences and industry-specific committee meetings. The conference will offer a full range of HVAC&R topics and explore emerging strategies to facilitate more collaborative approaches to achieving resilience and sustainability, ASHRAE said.

“The conference will focus on addressing the changes to buildings created by the pandemic and will present papers and programs that are pertinent to the future of the built environment, including decarbonization,” said Kristen Cetin, Conference Chair. “Buildings continue to be critical to our everyday lives, and as we continue to face climate extremes and natural disasters along with the aftermath of the pandemic, this conference will provide a sharing of knowledge to support improvements to our built environment.”

The conference includes both in-person and virtual options for attendees.

According to ASHRAE, technical program tracks include:

- Fundamentals and Applications
- HVAC&R Systems and Equipment
- Research Summit
- IAQ, Energy Use, Comfort and Health of Sustainable Buildings
- Connected Buildings, Connected Communities
- Buildings in the Aftermath of COVID-19
- Professional Development and Education

- Cold Climate Building System Design, Operation and Resilience

According to ASHRAE, The ASHRAE Learning Institute will offer 10 courses during the conference. All courses are approved for continuing education credits toward maintaining P.E. licensure, ASHRAE said.

In addition to honors and award recognitions, updates from Society leaders and the installation of new officers, incoming ASHRAE President, Farooq Mehboob will present his inaugural address on the 2022-23 Society theme, “Securing Our Future”.

ASHRAE said it will provide complimentary, onsite COVID-19 testing at the Sheraton Centre Toronto (headquarter hotel) for registered, international attendees.

The testing is intended to offer convenience for return travel to countries requiring negative tests, it said, adding it is committed to the health and safety of its members and conference attendees and is closely monitoring guidance from the Centers for Disease Control and Prevention, the World Health Organization, and local health agencies regarding travel and entry into Canada.

ASHRAE said the ASHRAE Ventilation 2022: 13th International Industrial Ventilation Conference for



Contaminant Control will immediately precede the ASHRAE Annual Conference at the same location, from June 22 to 24.

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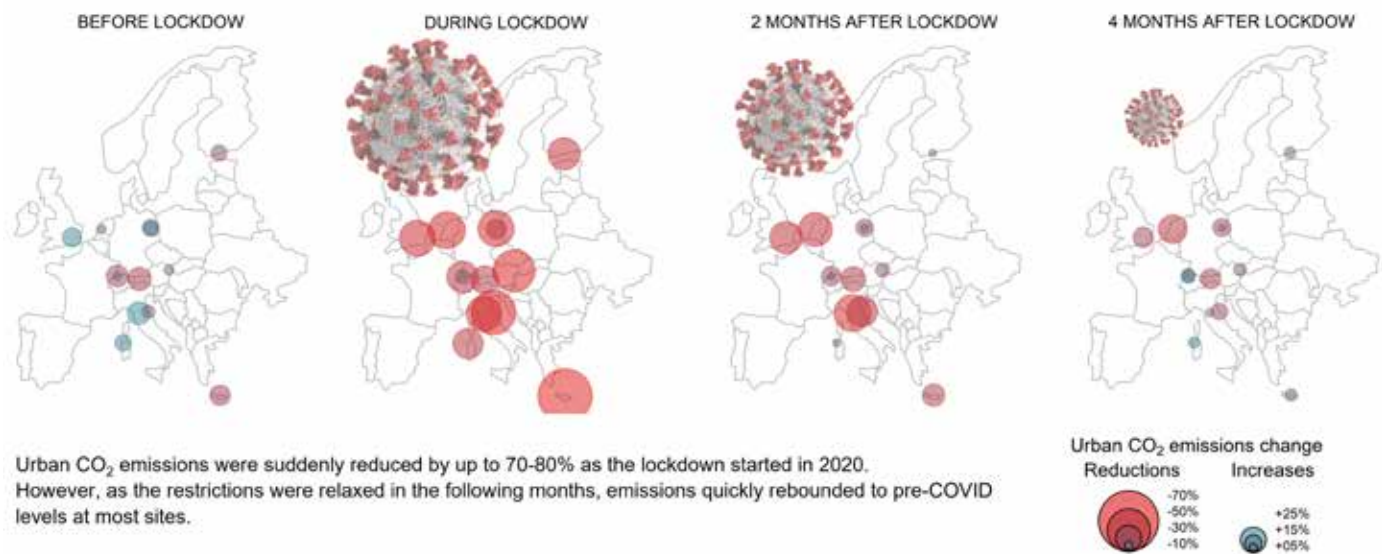
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# ICOS: Lockdown cut up to 87% CO<sub>2</sub> emissions in Europe

A recent international study led by Integrated Carbon Observation System (ICOS) scientists highlights the importance of human behaviour in the efforts to cut down CO<sub>2</sub> emissions

By CCME Content Team

## Effects of COVID-19 lockdown restrictions on CO<sub>2</sub> urban emission across Europe



**AS** COVID-19 first hit Europe in the spring of 2020, most countries laid out strong restrictions to limit the spread of the virus. Human economic activity and mobility in cities stopped almost instantly, and many people had to move their work from offices to homes.

A recently published study in *Science of the Total Environment* by Giacomo Nicolini et al shows that daily urban emissions were reduced by 5-87% during the lockdown period across 11 cities and 13 measurement sites, when compared to the same period in previous years.

According to the study, led by ICOS (Integrated Carbon Observation System), the largest reductions were seen in Heraklion in Greece; Pesaro and Florence in Italy; Berlin in Germany; Basel in Switzerland and London in the United Kingdom. In London, for example, emissions were reduced by 58%, in Berlin by 63% and in Florence by 66%, the authors of the study reported. In all cases, reductions happened mostly during daytime, except for Vienna, Amsterdam

and London, where the restrictions had a clear effect also at night, they added.

“Looking at the diel cycle of CO<sub>2</sub> fluxes, the reductions range on average from 67% in the city centre of Heraklion to about 10% in a residential area of Basel,” Dr Nicolini, the lead author of the paper, said. Dr Nicolini was also responsible for processing the data at the ICOS Ecosystem Thematic Center.

The study was initiated and led by other scientists from ICOS, which produces greenhouse gas data in Europe.

The main reason for the reduced CO<sub>2</sub> emissions in all cities was the reduction of vehicular traffic caused by the limitations on mobility, the authors said. This explains why residential areas saw the quickest rebound of emissions after the restrictions were lifted, they said.

In four cities – Berlin, Pesaro, Amsterdam and London – emissions remained statistically lower even after the restrictions were lifted, the authors said. In Amsterdam, the lower emissions can be explained by fewer tourists in the observed district, they said. Decreased tourism was

likely to have affected Pesaro and London, as well, they pointed out.

To effectively mitigate climate change, the authors concluded, there must be a bigger systemic change in cities’ ecosystems and in people’s lifestyles. As the COVID-19 lockdown showed, changes in human behaviour have a direct, immediate and significant effect on urban CO<sub>2</sub> emissions, they said.

The research highlights the importance of measuring urban emissions. To develop best practices in this emerging field, ICOS said it has taken the task to evaluate different observation methods in its recent EU H2020 project, called ICOS Cities.

Professor Dario Papale, University of Tuscia, in Italy, and Director, ICOS Ecosystem Thematic Centre, said: “The ICOS Cities project will bring an extensive urban greenhouse gas exchange data collection for the global scientific community, available through the ICOS Carbon Portal. This data collection will be useful for additional analysis on the complex urban greenhouse gas exchange dynamic.”

# Johnson Controls appoints new VP and Chief Commercial Officer

Rodney Clark will lead the Johnson Controls global growth strategy to serve customers and partners through innovative, high-value solutions and service offerings, company says

By CCME Content Team

**J**OHNSON Controls (JCI) has named Rodney Clark as Vice President and Chief Commercial Officer, effective June 1, 2022. Making the announcement through a Press release, JCI said that in this role, Clark will lead global sales excellence efforts across the company, replacing Chief Commercial Officer, Brian Young, who retired at the end of last year. Clark also will take on a portion of the role being transitioned from Michael Ellis, Executive Vice President, Chief Customer and Digital Officer, who will retire at the end of the year.

“I am excited to welcome a proven, strategic leader such as Rodney to Johnson Controls,” said George Oliver, Chairman and CEO, Johnson Controls. “As we deliver on growth platforms, such as decarbonization in smart, healthy buildings, Rodney will

build on our progress, collaborating with customers on outcome-based solutions and service offerings through OpenBlue, while expanding our market, building scale, capacity and capability.”

According to JCI, Clark most recently held the role of Corporate Vice President of Global Partner Sales and Channel Chief at Microsoft. In this role, Clark led a team responsible for customer and partner relationships, accelerating growth through the Microsoft partner ecosystem, as well as cross-partner strategy and outcomes through the Microsoft partner network, JCI said. Prior to this, he served as the Corporate Vice President of the Internet of Things (IoT) and mixed reality sales, responsible for building intelligent systems and mixed reality capability, through sales and go-to-market execution, JCI said.

Earlier in his career, Clark held

other notable roles at Microsoft, including General Manager, Samsung Alliance; General Manager, Global Operations; and General Manager, Small and Medium Business, JCI said. Additionally, he spent eight years at IBM and has held roles throughout his career in strategy, sales, marketing, mergers and acquisitions, and digital transformation. Clark holds a Bachelor of Science in Marketing from California State University, Fresno.

“I’m delighted to be joining Johnson Controls, they have an incredible team that is driving innovative technology that transforms ordinary buildings into dynamic, healthier, safer spaces for all of us to enjoy,” Clark said. “Adding intelligent cloud and intelligent edge solutions to their traditional offerings creates an enormous opportunity and will help customers address their most critical challenges – including the achievement of sustainability targets with agile, flexible and scalable solutions.”



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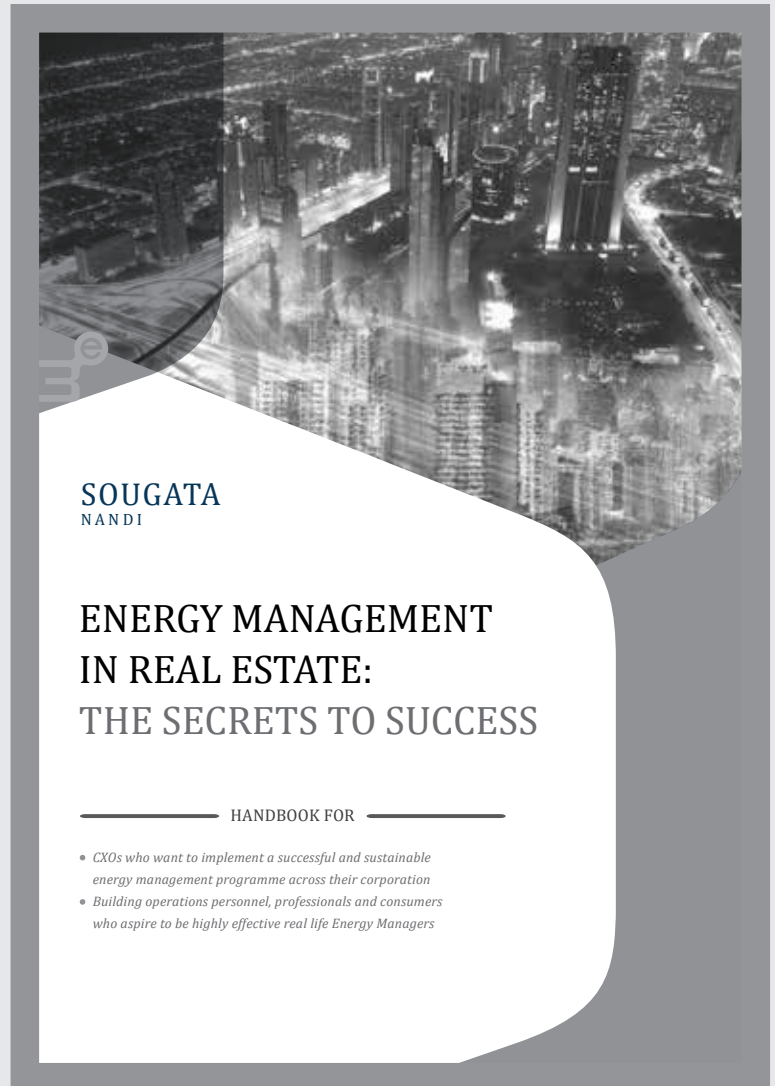
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## ENERGY MANAGEMENT IN REAL ESTATE: THE SECRETS TO SUCCESS



Author: **Sougata Nandi**, 2022

Review by:  
**Surendar Balakrishnan** | Editor,  
*Climate Control Middle East*



**E**NERGY Management in Real Estate: *The Secrets to Success*, by Sougata Nandi, is a timely reminder in a world distracted by COVID-19 that much still needs to be done in mitigating climate change. Written by an Energy Engineer by training, who had the distinct privilege of working for clients and working as a client in marquee energy management projects, the book, expectedly enough, is a multi-perspective narrative that gives readers an insight into how to navigate a corporate minefield to achieve the objective of energy savings. At the same time, it seeks to inspire consumers to become energy managers by overcoming self-doubt

and eliminating myths on the pathway that threaten to derail well-meaning efforts at curbing energy use.

Heavily anecdotal, the book draws from the author's numerous project-related experiences, among others, to drive home the importance of commitment, goal-setting and understanding the challenges at hand, prior to implementing an energy management programme.

Perhaps one of the most important chapters is on why energy management programmes fail. The author is in his elements as he provocatively lists and elaborates the reasons, among them being 'inadequately empowered ownership and stakeholder mismanagement', 'inappropriate energy management service

model' and 'inherent building design and operation challenges'.

The author is quite the eco-sage in page after page of riveting narrative. His advice is based on sound engineering and management principles and, at the same time, underlines the importance of human psychology and understanding organisational behaviour. The book is a crucial read for those wishing to draft customised sustainable development guidelines and checklists in corporates as well as in residences. **ccme**

*Energy Management in Real Estate: The Secrets to Success* is available at [amazon.com](https://www.amazon.com)



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# {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.

**“ The US Federal Reserve is planning up to eight separate increases of the borrowing rate by 50 basis points (100 basis points is one per cent) each time through 2022 and 2023. The “Finance Cost” section of your company’s income statement will begin to balloon this year, unsurprisingly.**

p7

**“ Working as an independent consultant is fraught with risks and uncertainty, but the right proportion of resourcefulness and diligence could lead to a lucrative destination.**

p10

**“ Some of the main factors that cause heat exchanger failure in HVAC systems are gasket failures or buckling of plate packs, when exposed to pressure surges, or damage resulting from poor assembly practice or a misaligned plate.**

p18

**“ The Italian government witnessed severe mortalities, which made them take a strong stand on implementing key initiatives. In addition to making the vaccination available for everybody, the Istituto Superiore della Sanità (Italian National Institute of Health) issued several reports addressing HVAC requirements.**

p32

**“ By dispersing the tracers into indoor air, and measuring their uptake with the monitors, we can deliver the first high-resolution image of exactly how bioaerosols travel in every corner of an office, institution, restaurant, gym or school. Our biosafety imaging reveals how ventilation, filtration and other safety measures are working, what needs attention and where our monitors can best mitigate the risks of exposure.**

p42

**“ The main contractor may allege that rather than legitimately suspending performance, the sub-contractor has actually abandoned the sub-contractor works, thus ‘turning the tables’ on the sub-contractor and exposing the sub-contractor to significant risk.**

p8

**“ In 2012, the population in the GCC region was 47.43 million; in 2021, it rose to 60.40 million. Peak electric load in 2012 was 97,536 MW; in 2021, it was 144,098 MW – you are talking of a 47.7% increase, while the population went up only by 27.4%.**

p13

**“ For the past 20 years, I have been wondering why the industry does not try and harvest energy from chilled water and condenser water loops.**

p20

**“ The implementation of Building Tracing doesn’t have to mean higher energy bills. There are lots of technologies available, including heat recovery solutions.**

p39

**“ Finding the right air proportion goes hand in hand with demand control ventilation. VFDs play an important role here in the ventilation system to reach the required efficiency and precision level of required air flows.**

p45

# SHAPE OF TECHNOLOGY



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# The Royal League

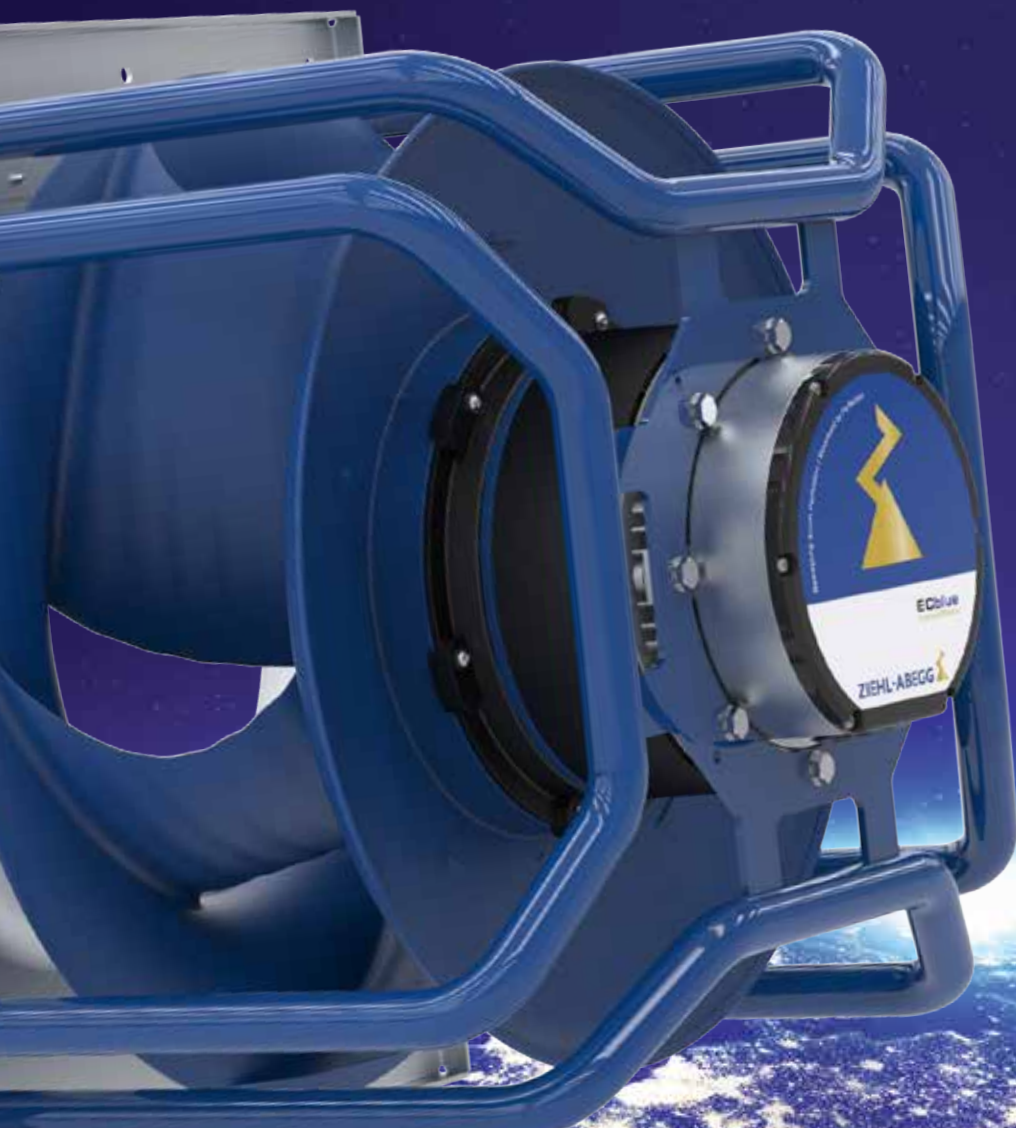
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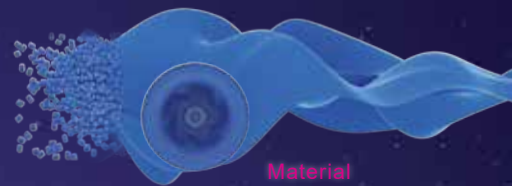
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