

Japanese aftershock felt far and wide

Two months after Japan's terrifying earthquake and subsequent tsunami cut a swathe of destruction across the country's north-east coast, the repercussions of that dreadful day on March 11 continue to be felt around the world, including in the HVAC&R industry.



We've all seen the devastation caused by the tsunami triggered by the Great East Japan Earthquake, as it has come to be known in Japan. We've mourned the loss of more than 14,000 people either caught in the earthquake or unable to flee the wall of water that followed.

Some of us have been personally touched by the tragedy. Others who watched it unfold on television; will likely never forget the vision of homes, buildings and infrastructure swallowed whole by the dark surge of water.

Several months on and while the world's media has moved to other stories, Japan has set about restoring its infrastructure and solving the energy crisis caused by the major crisis at the Fukushima Nuclear Reactor.

The reality, however, is that it will take years for Japan to fully recover. In the short term, the repercussions will be felt far and wide and impact many industries in one way or another, our own included.

This month, we put a call out to some key members of our industry – manufacturers, suppliers, installers – in a bid to gain some insights into the likely effects.

Unfortunately, many of our enquiries were met with a reluctance to comment, making the task of informing you of the exact impact all the more difficult. There has been enough media coverage and "counter talk", however, to draw the conclusion that there will be some effect.

The difficulty is defining just how large it might be.

Chips are down

One of the widely reported impacts of the disaster has been on the manufacture of silicon wafers used to produce semiconductors, with two major Japanese manufacturers ceasing production until recently.

Although you may not know what a silicon wafer is, you will be familiar with the products in which they are used. Wafers are thin slices of silicon that serve as the substrate for microelectronic devices, the electronic components critical to just about everything we use in the modern world.

This includes computers, mobile phones and of course, HVAC&R equipment.

Shin-Etsu Chemical's Shirakawa facility, which was badly affected by the disaster, is reportedly responsible for 20 per cent of the global silicon wafer supply. MEMC Electronic Material's Utsunomiya plant, also shut down as a result of the tsunami, represents 5 per cent of worldwide wafer supply.

Do the maths: Together, these two facilities are responsible for a quarter of the world's silicon wafer supply.

The suspension of operation at both these plants, if only for a month or two, is likely to have wide-ranging implications on worldwide semiconductor manufacture, and will ultimately affect manufacturers of most electronic devices.

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Similarly, Renesas Electronics, which manufactures semiconductors and is the world's largest manufacturer of flash microcontrollers, suffered significant damage to three manufacturing plants, while two others were mildly affected.

The company's microcontrollers and large-scale integration chips are used in the production of mobile phones as well as by the worldwide automotive industry; the latter is expected to be especially impacted by the shortage.

A report in *The Australian* recently cited Renesas clients as including Bosch, Hitachi and Mitsubishi Electric.

The disaster has also impacted the production of LCD panels used in televisions, due to a lack of gas used in their manufacture and the required recalibration of sensitive machinery.

Another impact on manufacturing is the disruption in supply of raw materials across Japan. How long these supply chains will remain affected is still largely unknown.

Though Japan's Minister of Economics, Trade and Industry has been reported as predicting full recovery would take until at least the second quarter of the new financial year, Shin-Etsu Chemical is reported to return to pre-quake production levels by July.

ActronAir's general manager, Graham Brown, however, suggests the supply of silicon wafer has been an issue the Australian manufacturer of split ducted and packaged air conditioning units has known about for some time.

"The supply of silicon wafer to meet global demand has been an issue that we have been aware of prior to the disaster in Japan," says Brown. "As a result, we have been working with our suppliers to secure supply for some months, and as a result have adequate stock of components to meet our needs."



The Fukushima nuclear reactor prior to the earthquake and tsunami.

The wider impact

Along with manufacturing facilities being damaged by the earthquake and tsunami, Japan's energy sector has also been severely affected, not least because of the crisis at the Fukushima nuclear reactor.

Tokyo Electric Power, which supplies the affected area, is facing a significant power shortfall with some reports suggesting it could be as high as 10,000MW or about 20 per cent of demand.

This has resulted in power restrictions being applied, with major manufacturers being asked to reduce their usage by up to 25 per cent, while households are being called on to reduce consumption by at least 15 per cent. Without such large restrictions, demand is likely to outstrip supply within a few months.

The use of air conditioning by both business and residents is also expected to be curbed, particularly as Japan's summer takes hold.

Closer to home

In recent times, the focus on global manufacturing has shifted from Japan to China and South Korea, yet the disaster in Japan only highlights how important the country remains in the world supply chain.

So it stands to reason that here in Australia, although some 6800km from the earthquake's epicentre, supply aftershocks will continue to impact a variety of industries for some time.

Immediate thoughts post-quake turned to the potential impact on the local automotive industry, a strong performer in recent years even while the GFC took hold – with sales of new cars breaking through the one million mark in 2010.

While supply issues of some vehicles are expected (Mazda was one that shut down production lines in the earthquake's aftermath) the reality is that many Japanese-branded cars are no longer built in Japan.

Revered Japanese brand Honda, for example, builds all but its Euro sedan in other countries.

Nevertheless, the supply of auto parts and components made in Japan have undoubtedly affected the trade, with Toyota's Altona plant, west of Melbourne, reducing its production of vehicles until supply issues are overcome.

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So, what of the impact on the HVAC&R industry?

Some of our industry's major equipment manufacturers were reluctant to comment when approached. Other industry members such as Heatcraft have come forward to allay fears of any major impact to the supply of HVAC&R parts and components.

According to Tony Queenin of Heatcraft Australia, when compared to the Queensland floods, Cyclone Yasi and Christchurch earthquake, the Japanese disaster has had minimal direct impact on the company here in Australia.

He says, however, that a number of Japanese suppliers are known to have been affected.

These include Inaba Denko, a supplier of premium air conditioning installation products, such as plastic ducting and mounting blocks for split air conditioners. It has been affected due to a fall in the supply of raw materials and components.

Saginomiya, a supplier of controls and valving, has also had difficulties with local transportation.

“For the most popular items there has and will be minimal impact on availability of the Inaba Denko range from Heatcraft,” Queenin says. “While Saginomiya’s issues again should have minimal impact on our ability to supply a control or valving solution to our customers.

“Our current supply status from Japan is relatively normal now so all we would ask of our trade customers is to be understanding if we cannot provide the exact item they require, and to consider using an alternative, as generally we can provide a solution from another supplier.”

Despite concerns that pricing has already been impacted, Queenin says that any price actions have been related to raw materials issues rather than as a consequence of the Japanese earthquake.

ActronAir meanwhile, reports that the Japanese disaster has had little impact on its operations.

According to Kevin Mundy, technical director, supply of its Australian-manufactured range of split ducted and packaged units remains unchanged.

The same goes for the Samsung SystemAir range of VRF and Inverter range of multiheads, cassettes, ducted and wall-hung split systems, which it represents as the Australian distributor.

“The supply of the ActronAir products has been unaffected,” Mundy says, “however to ensure that we can cater for market demand, we suggest that customers work closely with their sales account executive so we can understand their stock requirements over the next few months, and manufacture accordingly.”

Mundy says that while there has been word of other companies experiencing issues, ActronAir anticipates no issues with the supply of parts or components. As such he anticipates pricing will remain unaffected.

Brivis and Air Change also say there will be no impact.

On the ground, rumours of supply restrictions for some brands of residential air conditioning systems and spare parts abound, yet remain largely unsubstantiated.

According to John Grayer of AC4U Air Conditioning, while these rumours are currently just “counter talk”, he expects some supply issues to be inevitable.

“Let’s face it, supply will be an issue and it will show itself in some way within our industry because almost every manufacturer has links to Japan,” he says. “We as installers, however, will be the last to know as we are last in the chain, just before the end user.”

He says any supply issues would have a detrimental effect on installers such as himself.

“Supply issues would definitely affect us as installers and repairers,” he says, adding that installers are a canny bunch, and if they can’t supply one brand reliably, they’ll move to supply another.

“However, we will not be planning anything unless the rumours are substantiated.”

A wake-up call

The disaster that struck Japan on March 11 has only served to highlight the importance of the Japanese supply chain on the global electronics market. It will undoubtedly prove to be a wake-up call for manufacturers in related industries both locally and around the world.

It is also a timely reminder, even on a local scale, that over-reliance on one supply chain is fraught with danger.

Whether or not supply issues resulting from the Japanese disaster have a long-term impact, issues of supply chain integrity are sure to be a topic up for discussion in the board rooms of major companies around the world, including here in Australia.

However, with so many confirmed dead and thousands more still unaccounted for, any disruption to industry pails into insignificance compared to the human toll from one of history’s largest natural disasters. ■