



## Monthly Newsletter - January

Hello there,

Welcome to the January newsletter.

To our investors - thank you for investing alongside us, for the long term.

In this edition you'll find:

- January performance
- Impacts of Covid on performance of Solar Edge and Alfen.
- Zip rallies back
- Feature Article: Recent Innovations in Electric Vehicle Chargers, by our Analyst Niharika Joshi Bhatt.

### January Performance

Please find performance data by clicking on the links below.

[Wholesale Strategy](#)

[Retail Strategy](#)

### Impacts of Covid on performance of Solar Edge and Alfen

I have recently written about the impact Covid has had on Appen resulting in a temporary shift in focus away from long-term AI projects. Recent quarterly updates have shown impacts from Covid temporarily affecting SolarEdge and Alfen too.

#### SolarEdge

SolarEdge saw significant pullback in installations in the US during the pandemic, but strong growth in Europe and Australia partially made-up for the weakness. Overall, commercial installations globally are still suppressed by the pandemic.

#### SolarEdge Reduction in Revenue Growth Post Covid



Chart One. Decline in quarterly revenue growth rates for SolarEdge post Covid. Source: Factset.

As shown in the chart above, YoY revenue growth went from 52% in FY19 to only 2.4% in FY20. On a quarterly basis, revenue grew quarter on quarter at 58.6% in Q1FY20, 2.1% in Q2 FY20, declined 17.6% in Q3FY20 and again declined 14.4% in Q4FY20 (SolarEdge Quarterly Reports).

### Power Optimisers Shipped

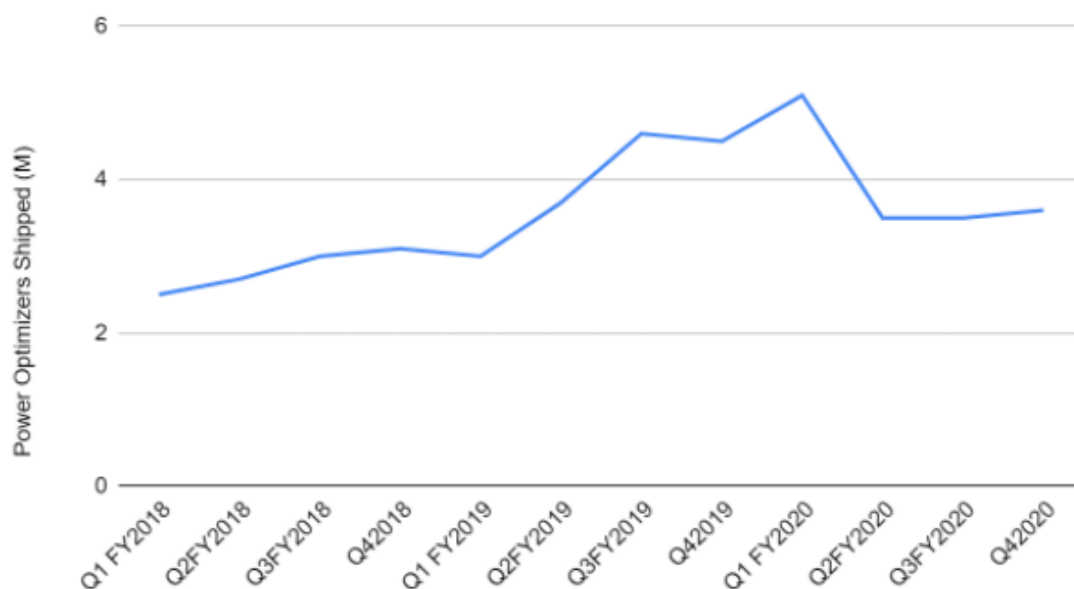


Chart Two. Decline in the number of Power Optimisers shipped (in millions). Source: SolarEdge Quarterly Reports.

As seen in the chart above there was a sharp decline in Q2FY20 and the number of power optimisers shipped have remained fairly static since with 3.5 million, 3.5 million and 3.6 million shipped in Q2FY20, Q3FY20 and Q4FY20 respectively (SolarEdge Quarterly Reports). We expect Covid to have a lesser effect on the numbers as the year progresses.

## Inverters Shipped

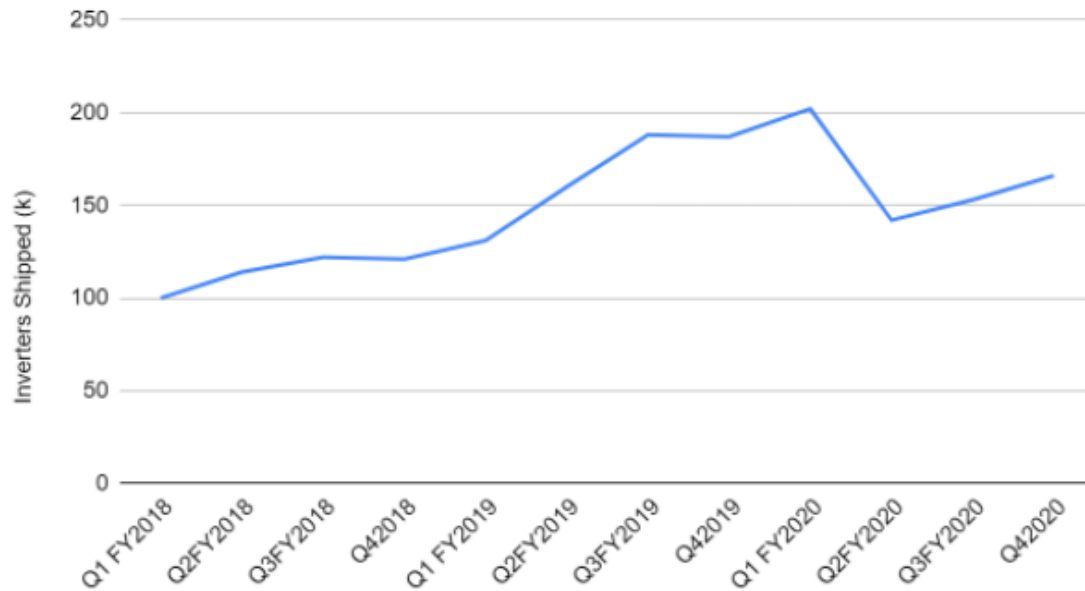


Chart Three. Decline in inverters shipped as a result of Covid (in thousands). Source: SolarEdge Quarterly Reports.

As shown above, there was a sharp decline in the number of inverters shipped in Q2 (142k) of 2020 due to the impact of COVID. The numbers have been gradually increasing in Q3 (153k) as well as Q4 (166k) (Source: SolarEdge investor calls) and we expect this growth to continue in 2021.

The situation in the US is now turning with a resurgence in installations of 50% quarter on quarter (Source: SolarEdge investor calls) and with continued growth in Europe and Australia, we expect to see revenue growth pick back up throughout the year.

### **Alfen**

In Alfen's Smart Grid solutions business line, the number of renewables developments are growing considerably. However, some projects have been delayed as a result of the pandemic, which affected Alfen's order intake and consequently, revenue growth.

This impact was somewhat offset through existing framework agreements with grid operators and through new contract wins in Alfen's microgrid business, but growth was significantly impaired versus that of prior years.

The EV charging equipment business line was affected by a difficult year for the automotive industry due to Covid. Demand dropped and car factories had to be closed for multiple weeks during the initial lockdown in spring (Alfen Investor Calls). Despite these setbacks, the EV charging market has been growing rapidly, supported by additional government support and incentivization. Alfen benefited strongly from increasing volumes under framework agreements set up over the previous years as well as from new client wins and sales expansion through Europe.

Covid also slowed down the growth of the energy storage market, delaying investments and projects. Yet, energy storage solution costs are coming down and this is driving a recovery in that market. This has enabled Alfen to secure new contracts and framework agreements towards the end of the year.

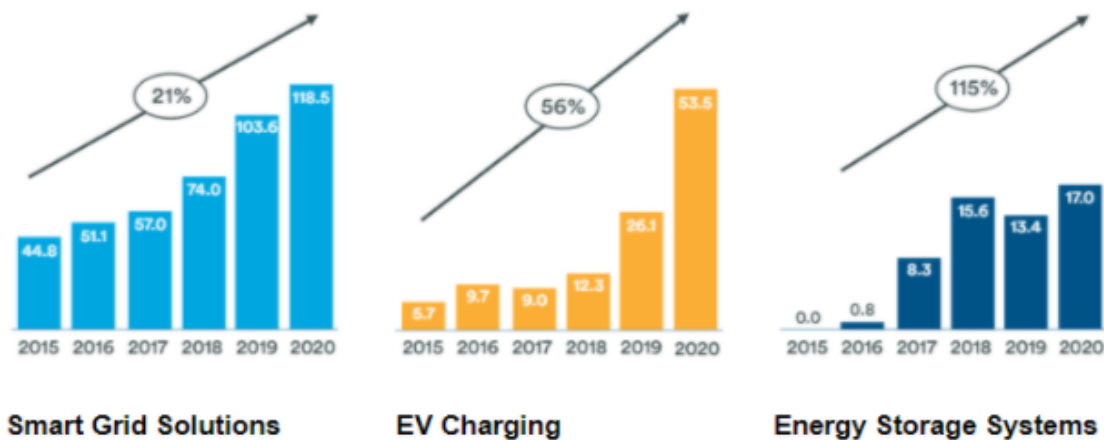


Chart Four. Annual revenue growth in Alfen's 3 business lines. Source: Alfen 2020 Annual Report

The chart above shows the relatively slow growth (14%) in Alfen's Smart Grids business line in FY20, resulting from delayed projects due to the pandemic. On the other hand, EV charging growth has been in line with the rapidly growing industry at 105% YoY growth in FY20. It is this growth in EV chargers that is one of the big stories behind our investment in Alfen. Revenue from this segment currently makes up 28% of overall revenues. In the coming years we anticipate revenue from EV chargers to become the dominant source of revenue for Alfen, while at the same time we anticipate the growth rate in that segment to be over 50% per annum. The Energy Storage business line also saw a resurgence with 26% YoY growth in FY20 after the 14% decline in FY19.

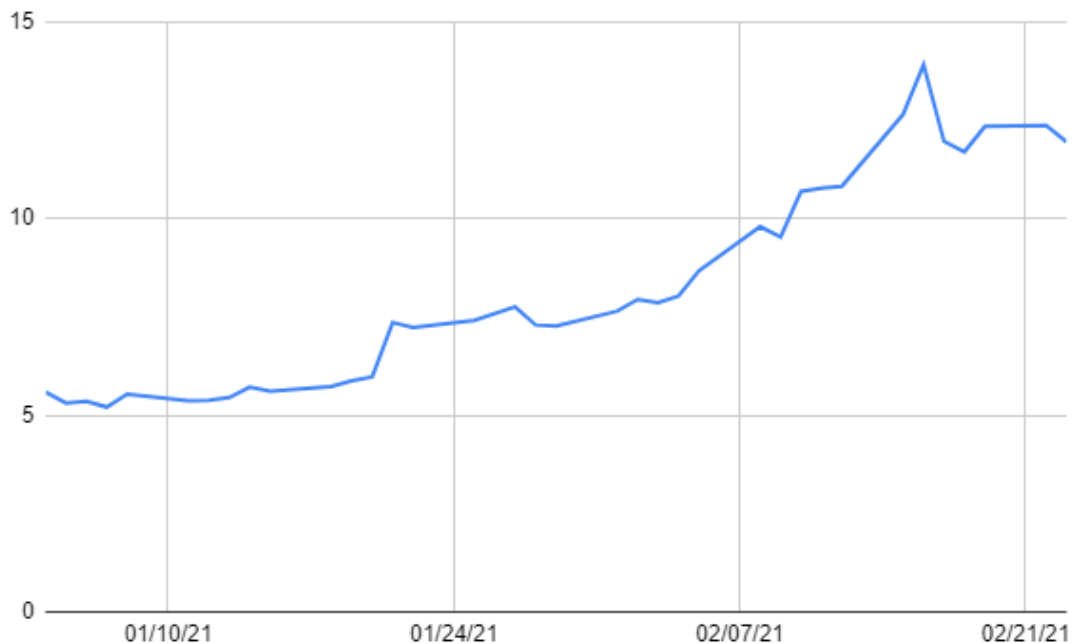
Overall, total revenues grew at 32% YoY in FY20, despite the impact of Covid, primarily due to framework agreements set up in previous years as well as new contract wins by Alfen (Alfen 2020 Annual Report).

Temporary situations, like the Covid crisis, are not of substantial concern to us. We are long-term investors, focussed on terrific businesses, and we are happy to hold through difficult times as we have conviction in the post-Covid future of these companies. Even during the Pandemic, Appen, SolarEdge and Alfen have performed exceptionally well. It is our view that these businesses are recovering and that recovery will accelerate throughout the year, particularly in the second half.

### Zip Rallies Back

In recent newsletters I have outlined our view that the market's selloff of Zip was unwarranted. Analysts had raised concerns that Zip was most at risk of being squeezed out of the industry from other competitors, particularly with the entrance of PayPal, and other concerns persisted around execution risk in Europe. Our view was, and still is, that Zip's product was differentiated in the market and that the company had proven its ability to compete and thrive in the mature, competitive buy now pay later (BNPL) regions; as it did so very successfully in Australia. In regards to execution risk in the UK, our view was and remains that Zip's entrance into the UK will not require exhorberent marketing spend. Zip already has the merchant relationships in that country having already partnered with them in their Australian and American outlets. The experience in Australia and the US has been that consumers gain exposure to BNPL providers and become clients on checkout. Over recent weeks the market has recognised the value Zip is creating and its growth potential sending its stock price up over 110% in two months (Source:Factset).

### Zip Stock Price Rally of Over 110% Across Two Months



## Recent Innovations in Electrical Vehicle Chargers

by Niharika Joshi Bhatt

There is currently a worldwide shortage of electric vehicle (EV) charging infrastructure. If countries hope to achieve their ambitious EV adoption targets, they'll need to roll-out considerable additional spending.

The UK alone will require 341,000 to 430,000 new charging units, plus 30% annual growth in additional charging infrastructure, in order to keep pace with its 2030 EV goals<sup>1</sup>. In the US, charging infrastructure deployment will require a growth of 20% per year to meet the 2025 targets across major markets<sup>2</sup>. There is a clear need for major innovation in EV charging technology however much confusion exists around the appropriate direction of that innovation.

Development in EV chargers must solve real problems while not creating additional problems, and they should be simple enough for people to understand, use and trust. Here are a few recent innovations in EV charging that look intuitively appealing.

### Pop-up chargers

After a successful trial in Oxford, Urban Electric is in the process of installing its UEOne pop-up chargers in two other localities of London<sup>4</sup>. As per the company, its pop-up chargers would solve the problem of 'at home' charging for the 43 percent of the UK households who park their cars on-street<sup>5</sup>. A pop-up charger pops up from pavements when needed and fully retracts underground when not.

Pop-up chargers provide charging right on the streets where the cars are parked, without permanently obstructing pavements. Given a large number of on-street parking spaces in Europe alone, there seems a lot of scope for their adoption. However, policy changes like Paris's plan to remove 72% of on-street parking spaces<sup>6</sup>, or the UK's plan to ban pavement parking<sup>7</sup> may pose a threat to its success. If 'car-free streets and pavements' becomes the new norm eventually, pop-up chargers would be rather short-lived.

### Street lamps fitted with EV chargers

Companies like Ubitricity in association with Siemens, and Char.gy are converting existing street lamps into EV chargers.<sup>8,9</sup> Like pop-up chargers, these slow chargers provide an answer for on-street charging, without changing the streetscape. Moreover, these fittings wouldn't require additional connections for electric supply, thereby reducing costs. A

country, like India, that has vast networks of street lamps but space crunch in all major cities can benefit from this innovation. All the same, streets with high footfall or traffic won't be suitable for fitting these chargers as that would lead to trip hazards, traffic jams and chaos.

### **Electrified roads**

The Swedish Government's EVolution Road Project aims to develop a system that would charge an EV while it's moving<sup>10</sup>. In this system, a conductive attachment under the moving EV slides along the rails of an electric road system (ERS) mounted on the roads, and charges the EV's battery<sup>11</sup>. The system also includes intelligent wireless communication between the road and vehicles, automated payments and security solutions. This system will eliminate downtime of charging, reduce dependence on bigger batteries, and partly do away with the requirement of charging stations.

### **Wireless charging**

Companies like WiTricity, Electreon, Hyundai, as well as various academic teams are working towards developing wireless EV charging that could charge stationary vehicles, as well as vehicles on the go<sup>12-14</sup>. Wireless charging relies on resonant magnetic induction to transfer energy between a pad on the ground, and another under the floor of a compatible EV directly without the need of any cables. Wireless chargers will be more user friendly than plug-in chargers. However, they come with their own challenges. For example, there are concerns that misalignment may extend the magnetic field beyond the demarcated zones, or there could be a wastage of electricity. Furthermore, to go mainstream, international standardisation of the technology may be required<sup>15</sup>.

### **Bidirectional chargers**

Many established big companies like Nissan, Mitsubishi, FCA, as well as relatively newer companies like Nuvve and Octopus EV are developing technologies for bidirectional charging<sup>16-19</sup>. With bidirectional EV chargers, electricity can flow both ways- Grid to Vehicle and Vehicle to Grid (V2G) or Vehicle to Home (V2H). This allows EVs to charge when the demand is low and give back when the demand is high. In this way EVs act as energy storage systems and help optimise energy consumption. However, acceptance of bidirectional charging is required at two levels. Firstly, collaboration with utilities companies is vital for the deployment of bidirectional chargers. Secondly, additional charge and discharge cycles due to bidirectional charging would shorten the life of batteries, and add complexity in the vehicle's design increasing vehicle cost<sup>20</sup>; this might discourage EV owners.

### **Charging robots**

Volkswagen Group (VW) has developed a mobile EV charging Robot that can navigate parking areas and power up EVs without any human interaction<sup>21</sup>. However, there is no timeline for when these will be commercially available. The Chinese company Aiways is also launching a Robotic EV charger named CARL<sup>22</sup>. VW's robot picks up an energy storage unit, drops it off at an EV for autonomous charging, and while one EV is charging, the robot can repeat the process for other EVs and collect the storage units when charging is complete. In contrast, CARL has energy storage built in it that has to be recharged by plugging in. So while VW's one robot can service several EVs at the same time, one CARL can service only one EV at a time.

### **Gas stations converted to charging stations**

While not a technological innovation, repurposing gas stations as charging stations can be looked at as a marketing innovation, and this is what Hyundai and SK Networks did in Seoul. They converted an old gas station into a charging station with a café and lifestyle

store. Hyundai also uses this facility to test drive its EVs<sup>23</sup>. As EVs become pervasive, many gas stations are bound to become redundant. Given gas stations have ample spaces, and are often positioned in places frequented by the public, they offer a great opportunity for positioning charging stations as a wholesome lifestyle experience for customers.

### **The future is electric**

Despite some challenges, the above innovations look promising and the different solutions may complement one another. However, in the future, when charging infrastructure catches up with the demand, these solutions may also compete with one another. For example, on-street wireless charging might replace both pop-up and lamppost chargers, mobile robotic chargers might overshadow wireless chargers, or wireless chargers on roads might be able to charge moving vehicles, competing with electrified roads. Nevertheless, one thing we can be certain of is that solutions that stay relatively simple, cost-effective and efficient will stay longer.

All the best

**Will Simpson**

**Portfolio Manager**



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