

Press release

## Domestic batteries, a revolution struggling to get started...

***In 2015, Elon Musk, the founder and CEO of Tesla, announced the start of a revolution in energy management with the spectacular presentation of his home battery, the Powerwall. The revolution was to enable users to significantly reduce their energy bills and even achieve energy autonomy. So where are we today? Has this revolution had an impact on energy suppliers? Alcimed, a consulting company specializing in innovation and the development of new markets, takes a look at the state of this revolution, the current situation and the impact of these products on the business model of energy companies that are positioning themselves on this market.***

Paris, September 26, 2017 – The launch of Tesla's "1st Generation" Powerwall in 2015 brought domestic energy storage into the spotlight. The main objectives of this Li-ion battery were to reduce the energy bill by storing energy during off-peak hours and to make self-producing consumers more autonomous by using photovoltaic panels. These ambitious objectives led Tesla to very quickly introduce the 2nd version of its Powerwall in October 2016. The battery then increases from 7/10 KWh to 14 KWh for a price going from about \$700/KWh to \$400/KWh in the USA, including the inverter and installation.

The price of the first Powerwall was a major obstacle to its democratization, especially in countries where the price of electricity is low, such as the USA, France or Belgium. The production of electricity with solar panels combined with a 1G Powerwall has been shown to cost 0.25€/KWh. The use of batteries is not viable in the USA, France or Belgium where the average selling rate per kilowatt-hour is respectively 0.10 (significant variation depending on the state), 0.15 and 0.19 €/KWh. In countries like Germany or Australia where the price of electricity is higher, respectively 0.27 and 0.25€/KWh, the use of such batteries could be a more sensible choice.

The Powerwall 2G made it possible to reduce production prices to 0.18€/KWh. However, this is not enough knowing that it is possible for a private individual to sell their surplus production to energy companies, as is the case in France, where EDF buys back electricity at around €0.10 per KWh.

### ***Automobile manufacturers are becoming major players in the process...***

Many manufacturers offer domestic batteries composed of the used batteries from their vehicles: after 8 to 10 years of use in an electric vehicle, a battery is no longer powerful enough. However, it can be reused as a domestic battery for an additional 5 to 10 years.

Renault and Powervault have teamed up to give a second life to the batteries from the Renault Zoé. The first tests should take place this month with the production of 50 units. Daimler as well as Mercedes Benz, BMW, and Nissan are also positioning themselves on the market, as are some equipment manufacturers such as Schneider Electric, Solarwatt, Sonnen, LG, Samsung, SimpliPhi, Sunverge, ElectrIQ and Panasonic.

For the moment, only Schneider Electric and LG offer batteries with a selling price of less than \$500/KWh. Mercedes Benz, Nissan, Solarwatt are currently announcing prices above \$700, \$1100 and \$1475/KWh respectively.

### ***... while energy companies start to position themselves on self-consumption***

EDF has just launched its turnkey offer "Mon soleil & moi" which consists of a free feasibility study, the installation of photovoltaic (PV) panels and an LG storage battery. Consumers become actors of their energy bills, consume their production and re-inject the surplus into the network in order to reduce their bills. Engie, for its part, should launch its "My Power" offer in 2017.

European energy companies, mainly in the United Kingdom and Germany, have also initiated this shift through partnerships or dedicated business units such as Vattenfal in Germany. In partnership with Solarwatt, E.ON, a European energy supplier, has been offering since June 2016 in Germany and Great Britain a "PV-home battery" solution coupled with a mobile application that allows the consumer-producer to control their production, consumption and measure the savings achieved in real time. EDF Energy in Great Britain offers a similar service in association with Tesla.

In Great Britain, IKEA is also offering an alternative for energy companies: in partnership with Solarcentury for photovoltaic panels and LG for batteries, IKEA is marketing a turnkey self-consumption solution.

### *Industrialization and supply-demand management will be the two turning points (or not)!*

Prices are high but still competitive in some cases, the business model is relevant for the consumer but does not yet offer enough perspectives... the players are evaluating the potential and foresee a tipping point. This transition will take place if we are able to industrialize battery production to significantly reduce prices. Tesla has already launched the "Gigafactory" project, which should reduce prices by 30% per kWh. Inaugurated at the end of July 2016, the site is currently 20% operational.

Currently, an annual 14% decrease is observed on the whole market; a price of 200€/kWh should be reached by 2020 falling to 100€ in the long term.

This transition will occur if we are able to better synchronize production and demand. As it can be considered as a competitor, supply and demand management will probably be more of a complement to batteries in order to limit storage needs. Comwatt and My Light System, two French start-ups, have recently released solutions in this direction. It is a box that allows you to measure and optimize your production and consumption, such as automatically launching your washing machine when electricity production is at its highest.

*"Elon Musk's enthusiasm and talent should not make us forget the associated industrial challenges. To succeed in the challenge of self-consumption among individuals, it will be necessary to significantly reduce storage costs and to manage more carefully between production and consumption periods. The relationship between individuals and energy is being redesigned. Will they become captive to the electric vehicle or solar panel suppliers for energy management, will they remain loyal to the traditional operators thanks to innovative offers adapted to their needs or will they evolve towards a greater autonomy? The same questioning can be observed among industrialists."* concludes Jean-Philippe Tridant Bel, Energy, Environment & Mobility Partner at Alcimed.

### **ABOUT ALCIMED – [www.alcimed.com](http://www.alcimed.com)**

Founded in 1993, ALCIMED is an innovation and new business consulting firm specialized in life sciences (healthcare, biotech, agri-food), chemicals, energy as well as in aeronautics, space, defense and public policy. Today ALCIMED works with major industrial groups, ETIs and SMEs, investment funds and institutional players. ALCIMED relies on a team of 180 highly-skilled individuals to help its clients in the exploration and development of their uncharted territories: New Technologies, Market Innovation, High-Growth Geographies, and Strategic Foresight. ALCIMED is headquartered in Paris and has offices in Lyon and Toulouse in France, as well as in Germany, Belgium, Switzerland, the United-States and Singapore.

#### **Press contacts:**

Marie-Caroline Saro | [mcsaro@comcorp.fr](mailto:mcsaro@comcorp.fr) | +33 1 58 18 32 58 | +33 6 88 84 81 74  
Sabrina Russo | [srusso@comcorp.fr](mailto:srusso@comcorp.fr) | +33 1 58 18 32 48 | +33 6 82 92 94 45