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EMIRI

Advanced Materials for clean energy – investing in Europe’s success

(interview of Dr Fabrice Stassin – Managing Director of EMIRI – given to the “EURONANOFORUM 2017 Conference” supported by EU Commission in frame of Maltese Presidency of EU)

“Advanced materials are the key enablers of most clean energy and clean mobility technologies. If you do not have the materials, you do not have have an application,” says Dr Fabrice Stassin, managing director of EMIRI (Energy Materials Industrial Research Initiative) and manager within government affairs team at Umicore, an industrial leader in advanced materials for clean energy, clean mobility and clean air as well as recycling of technology and precious metals. At this year’s EuroNanoForum Stassin wants to get the message across loud and clear, and to convince anyone who still needs convincing, that the future of the European economy and clean energy and clean mobility technologies needs stronger and more focused financial support from European Commission and Member States for the research and development (R&D) of advanced materials.

Umicore, a Belgian company with a past in mining, has since grown into a global clean technology company employing close to 10,000 people, generating a turnover of 11 billion euro in 2016 and reinvesting more than 400 million euro in R&D and capital expenditures. The company primarily boasts expertise in three key business areas: catalysis, energy and surface technologies, and recycling, thereby significantly contributing to clean air, clean energy and mobility and the circular economy, all subjects of strong strategic interest for Europe. “Umicore is actually one of the rare companies that can take metals, turn them into advanced materials and afterwards take these advanced materials and recycle them back into metals,” explains Stassin. “Umicore calls this closing the loop and many people today use the term circular economy”.

One of Umicore’s busiest fields of activity is in the fast growing market of rechargeable battery materials. Umicore has recently announced a 300 million euro investment programme in advanced materials for lithium-ion batteries which will be central to clean mobility and stationary energy storage for the next 15 to 20 years in Europe and globally. In order to stay ahead in business terms, investing in innovation is crucial

because innovation at the level of advanced materials brings down the costs while increasing performance to allow for further adoption and market deployment of lithium-ion batteries (advanced materials account for up to 70 percent of the cost of lithium-ion battery cells used in electric vehicles).

It is the same situation for most other clean energy technologies, with advanced materials today representing more than 50 per cent of their total cost. “Looking forward we see a few trends that in the near future will probably push the share of total cost from 50 per cent past 80 per cent, but at the same time reducing the total cost of all clean energy and clean mobility technologies”, says Stassin. These trends are the continuous improvements in advanced materials that are increasing the performance of clean energy and clean mobility technologies, the closing of the labour costs gap between Asia and Eastern Europe, the effects of Industry 4.0 and automation reducing labour and energy costs, the congested maritime shipping routes and an increase in shipping costs and risks. Provided European end-markets keep developing, these elements indicate the possible re-shoring to Europe of the manufacturing of clean energy & clean mobility technologies for the European market and relying upon advanced materials developed and manufactured namely within Europe.

Accelerating clean energy and clean mobility innovation cannot happen sustainably without accelerating innovation in advanced materials, and this represents a strong business opportunity for Europe. Today, the Europe-based industry of advanced materials for clean energy techs represents more than 30 billion euro yearly revenues, about 10 percent of which is reinvested in R&D and production capacities. This industry also employs 500,000 people (direct & indirect) which is half of all European jobs in clean energy value chains and created about 40 – 50,000 jobs in the period 2013 – 2016 to serve European market as well as global markets. Over the same period, the downstream part of the clean energy value chains unfortunately kept shrinking in Europe, with the loss of around 140 – 150,000 jobs (Europe saw a net job loss of about 100,000 while a net 150,000 jobs were created in USA and about 1 million in China). As Stassin has already mentioned, however, there is the positive prospect of a “Made in EU for EU” scenario in the near future powered by innovation in advanced materials

In order to advocate at EU level the key enabling role that advanced materials (ranging from non-ferrous metals to steel, glass, plastics and composites) play in accelerating the shift to clean energy and clean mobility, Umicore and other industrials, research organisations and associations set up EMIRI late 2012, now counting about sixty member organisations. Ever since its creation, EMIRI has worked well together with the Advanced Materials & Nanotechnologies Unit of DG R&I. In this way they ensure that the research and innovation priorities supported in Horizon 2020 in the field of advanced materials are in line with those of its members and the community, to successfully align private and public R&I agendas and contribute to maximising impact for the benefit of Horizon 2020 participants, the clean energy and clean mobility technology value chains and last, but not least, the European citizens.

Over the duration of Horizon 2020 it is anticipated that EU funding made available through the NMBP work programme to support advanced materials for clean energy and clean mobility should reach about 400 million euro out of more than 3 billion euro of EU funding for clean energy & clean mobility technologies. “There has been a strong evolution compared to the early days of Horizon 2020 but a step up in EU funding support for advanced materials for clean energy and clean mobility technologies is highly necessary if we want to make a difference in the interest of all parties while remaining a frontrunner on the global scene,” says Stassin.

For Umicore and EMIRI, ENF 2017 is a great opportunity to showcase the variety and richness of advanced materials available to tackle the global challenge of accelerating the shift to clean energy and clean mobility. “I want to make sure people understand that advanced materials are difficult, costly and risky to develop but without them you cannot function as a society. They are needed for your car, for your house, for clean energy, for the digital economy ... for everything around us,” Stassin explains. “At the end of day we want to ensure that policy makers are convinced and do their best with our help so that support for advanced materials in EU’s next framework programme (FP9) is increased, to support the reconstruction of a strong European industrial base that powers growth and employment while delivering affordable, secure and clean energy to citizens and businesses.”

It is now time for action !

EMIRI, the Energy Materials Industrial Research Initiative, represents more than 60 organizations (industry, research, associations) active in Advanced Materials & Nanotech for clean energy & clean mobility technologies. The association contributes to industrial leadership of developers, producers and key users of Advanced Materials by shaping an appropriate innovation, manufacturing and energy policy framework at European level. In frame of Horizon 2020, EMIRI collaborates with European Commission to develop the Innovation Pillar on Advanced Materials & Nanotech for clean energy & clean mobility technologies proposed in the EMERIT Industry-Driven Initiative.

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