POSITION PAPER

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DIGITAL4CIRCULARITY: Key recommendations for tapping into the synergies of the Circular Economy and the Digital Single Market

In the next ten years, technological innovation can create this change at a pace never seen before and open up immense opportunities for Europe if the right choices are made now. Orgalim has a 2030 industry vision for a renewed Europe that is centered on three strategic imperatives:

- embracing the innovation-led transformation of European industry
- enabling European industry's long-term global leadership, and
- transforming societal challenges into future drivers of prosperity.

Optimising the use of resources to ensure sustainable and inclusive growth and prosperity is a concept that makes sense and should lead to a major shift in the entire economy.

Together with the Energy Union, the EU's Climate Strategy, the Digital Single Market and the Internal Market for Products and Services, the Circular Economy is one of the core pillars, which, if well designed and part of a joined up and coherent industrial policy approach contributes towards the core overall sustainable jobs, prosperity and growth objective as well as European technology leadership.

Digitalisation not only enables finding the holistic answers to the system challenge that the Circular Economy poses, it can also accelerate its implementation.

Digitally enabled technologies help driving systemic change for the sustainable use of resources and for 'doing more with less' throughout the economy as productivity, energy and other resource savings are simultaneously boosted and fuelling new business models, services and opportunities for all. They help managing and optimising the use of resources, materials and products , which not only makes sense in the light of global resource constraints and demographic change. It represents an economic necessity for Orgalim representing EU technology industries considering the ongoing harsh global industrial competition and pressures on reliable and continuous access to affordable quality raw materials at a competitive price.

To tap into these system benefits and scale up the deployment of digitally enabled solutions in support of the UN Sustainable Development Goals and Paris Climate Agreement, Orgalim recommends prioritising the following actions during the next legislative cycle of the European institutions:

1. **Improve connectivity and set in place the relevant physical infrastructure:** investment in digital and clean energy infrastructure and modernising the EU's waste management infrastructure should be an absolute priority, since constituting a prerequisite for bringing the benefits of the ongoing digital, clean energy, low carbon and circular transformations to citizens, industry and the planet.

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2. **Build trust and credibility for enabling new partnerships**: an EU data framework that ensures both, fair access to data ("data sharing") and fair protection of data ("data privacy") in the Business-to-Business as much as in the Business-to-Consumer sphere should be established.

3. **Make EU regulation smarter, dynamic and consistent to be fit-for-purpose**
   Regarding EU environmental policy, for example:
   - Resolve inherent policy conflicts (waste-product-chemicals legislation) and apply agreed objectives consistently across policies and measures; these objectives need to work hand in hand with incentives to remove today's key barrier for the circular economy, namely that retail markets do not sufficiently reward the circularity potential already embedded in products.
   - Create consumer demand for circular products, facilitate the development of appropriate business models and reward them, use incentives, such as tax incentives or public procurement, which all stimulate the next step: a market driven circular economy with market oriented instruments.
   - Facilitate industrial symbiosis.
   - Regarding EU waste policy: ban landfilling, stop illegal waste shipments, ensure harmonised waste treatment standards across Europe, complement producer responsibility with "shared responsibility obligations" for all actors in all steps of the management chain of waste electrical and electronic equipment, set minimum quality criteria for secondary raw materials based on international and EU standards to stimulate a long-term market for recycled materials.

   Regarding the digital single market and innovative EU data framework:
   - Allow sandboxing.
   - Set in place an innovation friendly framework for the free flow on non-personal data within the EU.
   - Ensure the free movement of industrial non-personal data: remove localisation requirements imposed by national legislation; in industrial contexts, data are not just raw material but represent real-world business cases.
   - Apply the principle of "freedom of contract": it should be the basis concerning data exchange and flow of data overall in Business-to-Business (B2B) relationships
   - Respect Intellectual Property Rights, trade secrets and the right of companies to protect their know-how in B2B relationships also in the digital age; the Trade Secrets Directive is an important tool to prevent unauthorized or criminal access to know-how.
   - In industrial networks, enterprises must be able to decide and to negotiate to what extent and under which conditions they share data (the opening of all scientific data produced by H2020 projects by default could discourage collaboration).
   - Data ownership: a creator should be free to determine by contract the conditions of use of his/her data; business partners should find the appropriate agreements on data handling

4. **Address the digital skills shortage by equipping Europeans with the right set of digital skills in order to seize the opportunities of new technologies to drive growth and enable a prosperous and sustainable future:** continuously building the necessary skills, attracting talent, training and upskilling of personnel are fundamental for success.

Embracing the synergies between digitalisation and the Circular Economy means enabling Europe to lead in this ongoing transformation stemming from the fusion of data and physical assets through its manufacturing strength. At the same time this generates overall welfare and prosperity, jobs and sustainable growth next to global competitiveness of EU industries allowing Europe's technology companies to tap into a wealth of potential to create new business models, new jobs and new products and services.

ANNEX: Examples of synergies between Digitalisation and the Circular Economy

(1) Resource savings through the use of ICT in manufacturing:
Through the use of digital technologies in (cloud based service lead for optimising logistics of trucks, personnel and fuel), a Finnish company reduced costs and burden on the environment for collection and transport of waste in cities by 50%.

(2) More green energy and less waste through use of sensors and data analytics:
A Danish producer of wind turbines increases the efficiency of 25000 wind turbines through predictive maintenance: each of the turbines is equipped with sensors. These 25000 turbines send their performance and diagnostic data, which allows the producer to precisely plan maintenance and inspection. These may then be carried out during times of lower demand and according to weather conditions. Wind turbines down-times are reduced considerably. The lifetime of parts is increased; the need for spare parts reduced; less waste is generated and staff benefits from improved planning.

(3) Less fertiliser use due to increased use of ICT in agriculture equipment:
Precision farming is increasingly used to ensure optimal growth and quality of crops. Instead of a uniform application of fertilisers, which does not reflect the natural variation of nutrients already in the soil, a more advanced method is used: A real-time nitrogen-sensor, installed at the front of the tractor, measures automatically the exact amount of nitrogen in the leaves, be it day or night. Its computer then tells the fertiliser spreader (or sprayer, for liquid fertiliser) at the back of the tractor to deliver the optimal quantity of fertiliser. Fertiliser savings of up to 14% and an average productivity increase of up to 6% result in a direct benefit to the farmer while preserving the environment.

(4) *Innovating and generating resource savings through the digital twin*
Companies copy a real-life process in a digital twin: the twin is the virtual copy of a real machine/system/factory, which helps to simulate all aspects of the plant and its installations in order to optimise it. The two twins – the physical plant and the digital copy – are permanently connected and can develop a common memory. The simulations open up for entirely new dimensions for optimising processes or resource use from a life cycle perspective, from product design, production planning, engineering to commissioning, operation, servicing and the modernization of systems and plants. And manufacturers can develop new services from this and find new business models for and with their clients (co-value is created and shared).

(5) *Industrial symbiosis through digitally enabled technologies*:
On a dedicated platform, companies offer their waste that can become the resource for another company - digitally enabled technologies make industrial symbiosis a reality.

(6) Less water and energy use through sensors and data analytics:
An Austrian skiing resort has equipped its snow groomers with sensors. In combination with GPS and a detailed, electronic map, this system measures the exact height of the snow coverage when operational on the slopes during the night. This system is interconnected with the operation system of the snow generators. The precise data transmitted allows the ski resort to produce less additional snow, under ideal metrological conditions and precisely at the places where it is needed. Besides saving on capital through less equipment and a better maintenance schedule, the ski resort managed to save per season up to 25% of the water and electricity previously used for snow production.

(7) Resource savings through the use of ICT in manufacturing:
A Hungarian manufacturer did an internal analysis of its production facilities. He put sensors throughout the plant and found multiple savings, including in the heating and cooling systems: By connecting the compressor cooling system to the hot water production for showers of workers, which are simultaneously used, energy savings were realised that translated into some 100.000 Euro annual cost savings.

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