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A traiter par: cabinet

Monsieur Claude Meisch
Ministre de l'Enseignement supérieur et
de la Recherche
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de la Recherche
18-20, montée de la Pétrusse
L-2327 Luxembourg
Luxembourg

Luxembourg, June 7th, 2023

Subject: Position of the Luxembourg Institute of Science and Technology (LIST) on the final external evaluation reports 2018-2021

Dear Minister Meisch,

We confirm receipt of the reports that were transmitted to LIST on March 08, 2023, following the evaluation of the Institute's four Research, Development, and Innovation (RDI) departments conducted by a panel of independent and external experts in 2022 according to Article 9 of the Convention LIST/CP5-22-25, and we very carefully have read them.

We welcome these reports and thank the panel of experts for its analysis and recommendations. The reports and the discussions we had with the evaluation team throughout the evaluation process provide us valuable insights and guidance on how to further develop LIST in the coming years.

We are pleased to see that many of the conclusions and recommendations align with LIST's strategy - the following paragraphs outline how LIST's strategy's implementation intends to respond to some of the recommendations made by the panel of external experts and emphasize the initiatives that LIST has already started or intends to put in place. We identify the recommendations related to the revision of the **Key Performance Indicators (KPIs)** following the clarification of LIST's position in the research landscape in Luxembourg as requiring further concertation with the Ministry of Higher Education and Research (MESR) to assess the possibility to address them (LIST R7, ITIS R8, ERIN R8). At the same time, LIST recognizes the value of having KPIs that would help to assess the outcome and impact on the economy and society and has defined several internal indicators that go in that direction, in addition to the two new Performance Contract (PC) KPIs related to the technology demonstrators and sustainability by design that were validated by the MESR in the 2022-2025 PC. Over the next three years, LIST will carefully monitor these PC KPIs and internal indicators and evaluate the

Over the next three years, LIST will carefully monitor these PC KPIs and internal indicators and evaluate the extent to which they help the Institute to reach its objective of creating more impact. Based on the results of this analysis, LIST may make a proposal to revise its current PC KPIs to the MESR in 2025, in preparation of the negotiation of the new PC with the ministry.

LIST is in the process of implementing an organizational model which comes along with adaptations to be made to the **structure and organization of the RDI departments** including the creation of a matrix structure with the definition of the LIST Innovation Centres (LICs) and the establishment of new organizational structures, such as the Science, Technology & Partnerships offices (STPOs). While certain changes have already taken place, the majority remains to be implemented of which the matrix structure and fully-fledged LICs. At the moment, LIST has launched three LICs which are still at an early stage of development and follow a different strategic approach in terms of partnership model and governance to create impact. In the coming years, LIST will closely monitor the progress made by each of these LICs against the objectives set out in their strategic plan to take corrective actions where need be and identify best practices in view of the possible launch of new LICs. LIST will pay close attention during the whole implementation of the LICs as to evaluate whether the benefits gained through the matrix structure, such as increased cross-departmental collaborations and synergies, outweigh the additional organizational complexity that such structures create (LIST R1, ITIS R3, ERIN R2).

LIST's primary objective regarding **the corporate support structures** is to turn them into an efficient, services-minded support organisation with a focus on sustained process improvement. In this respect, LIST intends to install an efficient management operating system. This system, which aims to address specific operational and innovation processes and workflows and the complex relationships between them, will help LIST align both research and administrative teams and ensure that the support structures provide quality services to the RDI departments thanks to the establishment of more standardized support services, operational discipline and elimination of duplicated efforts. Today, LIST is at the early stage of developing such a system and we estimate that it will take some time before the new system takes firm hold across the organization. Starting in the second half of 2023, LIST will review its current cost model with among others the objective to seek ways to expand the basis for cost eligibility (LIST R2, MRT R7).

LIST also places great importance on **Knowledge and Technology Transfer (KTT)**. A series of actions have therefore already been conducted including the creation of LIST Venture, the definition of LIST IP Policy and the drafting of a spin-off policy at LIST. LIST goal for the next years is to maintain the momentum by strengthening further its KTT activities. Key in this endeavour will be the recruitment of the Head of the Technology Transfer Office (TTO), who will be in charge of further professionalizing the different transfer support structures present in the RDI departments, the development of a coherent spin-off program, and the further clarification of the mission of the Research Administration Office (RAO) which currently provides EU and FNR proposals support to the RDI departments (LIST R9, ERIN R4, MRT R10).

The LIST Human Resources (HR) strategy places a high priority on promoting **diversity and inclusion** within LIST through the creation of a diverse and inclusive work environment with a strong focus on equality and respect. A Diversity & Inclusion officer was appointed in 2021 who is in charge of overseeing the implementation of LIST Diversity & Inclusion Charter to

improve equal opportunity and gender equality within LIST. In the Charter, a series of goals and measures related to gender balance are identified for which a detailed plan will be established and implemented throughout the coming years. It is also LIST's goal to increase the proportion of women in research career paths and strive for gender-equal participation at the management level (LIST R3, ITIS R5, ERIN R7, MRT R9).

Another pillar of LIST's current HR strategy is to retain and motivate LIST employees by offering them great **career opportunities**. In 2022, significant progress was made in the development of new career paths to enable LIST employees to advance their career. LIST aims to implement these new paths in 2023-2024 (under the condition that LIST current sound financial situation is maintained) with the objective to stimulate LIST employees to develop their skills and competences for their own benefit but also for the benefit of the institute (LIST R8, ERIN R5).

Improving LIST's current financial strategy and processes is one of the strategic objectives of LIST, including the review of the **allocation process of the block-grant (BG)**. To that end, LIST has recently launched an improvement project which aims to provide a detailed analysis on how LIST currently uses its BG and financial reserves. The project results are the first step towards an improved financial monitoring and the development of a possible, at least partial, ex-ante distribution of part of the BG to the RDI departments (LIST R4).

Another strategic objective of LIST focuses on increasing **LIST visibility**, including building and exploiting LIST brand in Luxembourg and beyond. LIST aims to improve its outreach and communication strategy in line with LIST strategic ambitions to be implemented in the following years (ERIN R3, MRT R8).

The RDI departments oversee the definition and implementation of the departments' research and innovation (R&I) strategies while ensuring they are aligned with LIST strategy, values, and mission. Each department's strategy integrates the department's specificities in terms of available competences, skills, current areas of expertise and market perspectives which explain the differences in the strategic approach followed by the four departments.

The RDI departments' strategies are regularly presented by management to and validated by the LIST BoD. They are regularly updated to consider the evolution of the Luxembourg's Government and European Commission's policy priorities, changes in LIST stakeholder needs, and new technological advances. They are also adapted to address the departments' potential weaknesses with the objective to further develop LIST scientific and innovation excellence. Following a LIST BoD decision taken in 2022, LIST BoD will set up an **external Scientific Advisory Board (SAB)**. The SAB, of which the detailed composition remains to be defined, will provide support in the strategic development of the institute directly to LIST BoD (LIST R6). In parallel, LIST ExCom has also started discussions regarding the establishment of advisory groups of experts at the level of each RDI department (ERIN R1, ITIS R2, ITIS R6, MRT R6).

In the coming years, all four departments will strive to implement their **R&I strategy** successfully, while also proceeding to some strategic amendments based on the conclusions and recommendations of the external evaluation. ERIN will continue its efforts to develop and implement a coherent market strategy including the further refinement of its innovation strategy based on the development, protection, and market exploitation of its Intellectual Property (IP) assets (ERIN R1), as well as further develop its Partnership Office (ERIN R2). ITIS will pursue the consolidation of its R&I activities into eight research groups, six Technology and Innovation Lines, and one research and technology platform (Artificial Intelligence and Data Analytics platform – AIDA platform). The strategy of all research groups as well as of the AIDA platform have now been clearly formalised in the form of Strategic Research and Innovation Agendas for each entity and have started to be implemented since the reorganisation of the ITIS department at the beginning of 2022 (ITIS R1). Over the next period, MRT intends to continue implementing its current strategy which was assessed positively by the panel of experts (MRT R1). Building on its experience with gaining relevant feedback from its partners benefiting from its technology services through customers satisfaction surveys, the department will seek to develop a similar approach for collecting feedback from its collaboration partners (MRT R4). As a new RDI department, ESRIC will continue to develop expertise in core competences in line with its vision (ESRIC R1), while monitoring the dynamic space resources sector for future opportunities in which to expand (ESRIC R2).

LIST is committed to **collaborating with the University of Luxembourg (UL)** in scientific activity, teaching and research support infrastructure to ensure their individual development but also to contribute to the development of the public research and innovation system in Luxembourg. In November 2020, both Parties signed a Framework Agreement to formalize their intent to cooperate through staff linked to both institutions, participation in common research projects, set-up of inter-institutional research group (IRG), implementation of common research programmes, teaching and doctoral education and infrastructure. Since then, and in addition to the four affiliated professors at UL, the 78 LIST researchers entitled to supervise PhD students at UL, 87 joint scientific papers published in 2022, and the two Doctoral Training Units jointly conducted (Massena and Pace, accounting for 32 PhD students in total), the first Luxembourg IRG in "Physics of ferroic materials" between LIST and UL has been created, a LIST PEARL professor, who shall become associate professor at the UL, has been recruited, and multiple teaching and training activities have been provided by LIST-ERIN/MRT/ITIS to the UL students on top of hosting university laboratories and offices (Energy materials lab, PV lab, Multiferroic lab) in LIST premises. LIST intends to build on these achievements by notably submitting a NCER proposal on Data-Driven Energy Transition together with UL and LISER in 2023 and developing more interinstitutional research initiatives with UL in the next years (ITIS R7), including a National Research and Technology Transfer Program in Space Sustainability as well as teaching on the UL's Interdisciplinary Space Master from Autumn 2023 onwards (ESRIC R5).

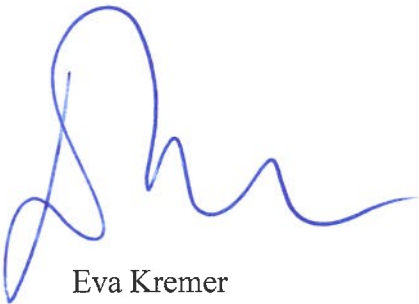
In addition, LIST is also committed to actively working towards **complementarity with UL** (LIST R5). LIST has actively started to engage with UL to clarify the positioning of both institutions in the environmental domain in view of the development of the Interdisciplinary Centre at the UL that will focus on complex environmental systems and the transition of the Environmental Research and Innovation (ERIN) department foreseen in 2024-2025, LIST will continue to seek opportunities to exchange on this topic with the objective to build the new UL Centre that will complement the skills and expertise of ERIN in the field of environmental sustainability for the benefit of Luxembourg's sustainable transition (ERIN R6). LIST also

plans to extend its collaboration with UL in the fields of materials sciences, through the submission of a joint Initiate with UL-PhysMS in 2024 in the fields of materials informatics and truly zero carbon plastics as highlighted in LIST MAP (MRT R3).

LIST has had a long history of **collaboration with research institutions outside of Luxembourg**, in particular in the domain of environmental sciences due to the absence of significant research, Master studies, and PhD programmes in this domain at UL. The establishment of further formal links with relevant international research institutions will be pursued in the future, including the introduction of joint positions between LIST and universities outside Luxembourg to allow exceptional researchers with a competence of strategic interest to LIST to have an affiliation with LIST (MRT R2).

We want to reiterate our thanks to the panel of external experts for their analysis and would like to mark our appreciation for the assistance received from the MESR during the evaluation process. We remain available should further clarification be needed on our position regarding the evaluation reports.

On behalf of LIST, I would like to thank you for your ongoing support to our Institute. Please accept, dear Minister Meisch, the assurance of my highest consideration.



Eva Kremer
Présidente