East and North Finland in Industrial Transition - High Impact Action Guidelines

September 4 2019

East & North
FINLAND

Itä- & Pohjois-
SUOMI

This High Impact Action is made possible thanks to funding from the European Commission:

European Commission

Contents

0 / Terminology and key concepts 3

1 / Introduction East and North Finland in industrial transition pilot 5

2 / Purpose and scope of High Impact Action (HIA) 5

2.1 Purpose of the HIA Call 5

2.2 Description of the HIA 7

2.3 HIA funding conditions and scheme 8

3 / HIA call practical procedure 10

3.1 Eligibility conditions 10

3.2 How to apply 11

4 / Evaluation of the High Impact Action applications 12

4.1 Evaluation process 12

4.2 Evaluation criteria 13

5 / Administrative duties for the selected HIA projects 14

0 / Terminology and key concepts

East and North Finland (ENF regions) - NUTS II region, is formed by regions of Lapland, Northern Ostrobothnia, Central Ostrobothnia, Kainuu North Karelia, Pohjois-Savo and South-Savo.

Direct beneficiary - micro-, small- and medium-sized enterprises (SMEs) from ENF regions, see European Commission SME Definition 2003/361/EC http://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en

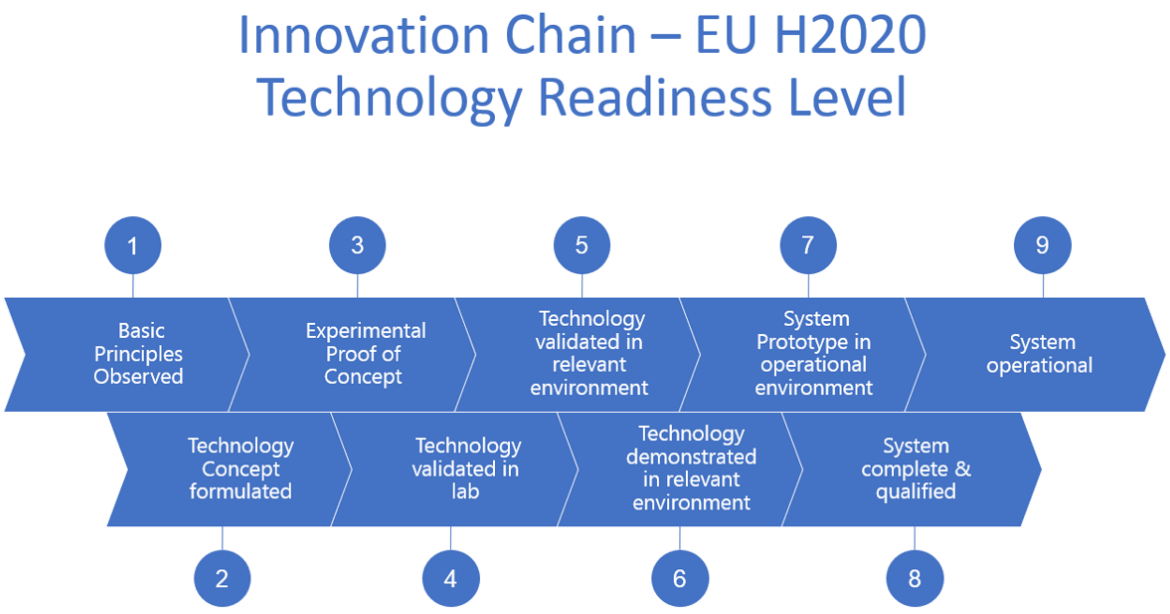
End-user or customer - any companies (including large scale), municipality, town or any other end user benefiting from the new applications / processes / products / services provided by the SMEs and micro-companies. Projects selected will be carried out in close collaboration with the different actors of the related value chain.

Service provider - university/university of applied sciences, vocational institution, business development agencies, technology parks or Research and Technology Organisation (RTO) from East and North Finland or having office at least in one of the ENF regions.

Voucher - will be targeted towards collaborative projects of one or more companies who aim to co-develop together with the service provider(s) workable solution(s) for a (previously identified) end-user, intending to increase the technological and market maturity of their solution beyond technology readiness level (TRL) 6. The voucher system will help one or more direct beneficiaries make better use of inter/cross-regionally connected Research and Innovation Infrastructures to deploy innovative solutions in the tree, wood and timber value chain.

Technology Readiness Level (TRL) scale - measures the maturity of a technology by assessing its proximity with the commercialisation stage, from basic research (TRL 1) to prototyping (TRL 4-5) and full commercialisation (TRL 9)). It is used to position the progress of a technology, product or process on a scale ranging from observed concepts (1) to validated operating systems (9).

First used by the space and military sectors, the TRL was adopted by the European Commission in its framework programme Horizon 2020 in order to boost innovation. This means that any technology can apply for specific funding based on its Technology Readiness Level.



Technology Readiness Levels

TRL 0: **Idea**. Unproven concept, no testing has been performed.

TRL 1: **Basic research.** Principles postulated and observed but no experimental proof available.

TRL 2: **Technology formulation**. Concept and application have been formulated.

TRL 3: **Applied research**. First laboratory tests completed; proof of concept.

TRL 4: **Small scale prototype** built in a laboratory environment ("ugly" prototype).

TRL 5: **Large scale prototype** tested in intended environment.

TRL 6: **Prototype system** tested in intended environment close to expected performance.

TRL 7: **Demonstration system** operating in operational environment at pre-commercial scale.

TRL 8: **First of a kind commercial system**. Manufacturing issues solved.

TRL 9: **Full commercial application**, technology available for consumers.

DIH Digital Innovation Hubs - one-stop-shops that help companies to become more competitive. DIH act as a first regional point of contact, a doorway, and strengthen the innovation ecosystem and they are based upon technology infrastructure (competence centre). DIHs provide access to the latest knowledge, expertise and technology to support their customers with piloting, testing and experimenting with digital innovations.

KPI Key Performance Indicators (KPIs) - are the critical (key) indicators of progress toward intended outcomes. KPIs provides a focus for strategic and operational improvement. The use of KPIs includes setting targets (the desired level of performance) and tracking progress against that target.

1 / Introduction East and North Finland in industrial transition pilot

The natural environment plays a far more important role in the ENF regions than in other parts of Finland and the European Union. The ENF regions have a mixture of abundant natural resources. Vast deposits of natural resources provide business opportunities and generate investments and employment. At the same time, there is a pressing need to create and nurture a sustainable balance between these industries, other sectors and the vulnerable northern ecosystems.

It is challenging to maintain the preconditions for sustainable development under northern conditions of harsh climate and fragile nature. Therefore, introducing the principles of circular economy and resource efficiency to all industrial sectors and enterprises of all sizes is crucial for sustainable economic development in ENF regions. The long distances and declining population in ENF regions require the development of next generation innovation platforms, living labs, distance spanning clusters and Digital Innovation Hubs (DIH), better connected to the public Research, Development and Innovation (RDI) resources. This is a critical prerequisite for overcoming the issues linked to the lack of critical mass in the region. In the sparsely populated regions, digital solutions can make distances shorter, improve services for rural communities and support growth and job creation.

Together ENF regions sent the Expression of Interest in reaction to the call organised by Directorate General Regional and Urban Policy (DG Regio) of the European Commission to participate to the Pilot action for Regions in Industrial Transition. ENF regions were accepted among 11 other regions and countries. ENF regions were seeking to strengthen the regional industry's ability to continuously adapt, innovate, facilitate investment in new technologies and implement changes supporting the transition to a low carbon and circular economy. In ENF regions the collaboration is referred to as ELMO (Itä- ja Pohjois-Suomen elinkeinot murroksessa – pilotti).

The ELMO co-operation has launched a new phase in the development of ENF inter-regional collaboration. The recognition of common strengths and complementary competences reinforces collaboration across regional borders. ELMO work will continue until the year 2023. The process is built on a strategic analysis carried out together with the external experts, and the analysis has also served as the basis for the East and North Finland industrial transition – smart specialisation strategy.[1]

The implementation of the industrial transition pilot headed by the European Commission will last until the year 2023, and by then the next programming and financial period will already be running. In early 2019, an implementation plan for the strategy was drawn up with the support of the experts provided by the DG Regio. The strategy testing is made through the High Impact Action Pilot, where DG Regio will provide pilot funding in the amount of 300 000€ to be used in the form of innovation vouchers. The testing will be implemented in ENF regions through new wood innovations pilot projects.

2 / Purpose and scope of High Impact Action (HIA)

2.1 Purpose of the HIA Call

The global objective of the action is to broaden the innovation base and strengthen the value chain in the agro-forestry sector. The action will test a new policy design introducing a circular economy element into this sector.

[1] https://issuu.com/ip-suomi.elmo/docs/elmo-strategy_english_web

The action selected will set up a **cross-regional vouchers' system** across the ENF regions to **stimulate digitisation and circular economy in the tree, wood and timber value chain**, including for instance:

- Improved automation and digitisation of (segments of) the value chain (advanced manufacturing);
- New smart, digital solutions (new sensors, real-time monitoring of forestry biomass, digital platform for storing, sharing and bundling of side-streams, Artificial Intelligence (AI) applied to harvesting and logging, etc.);
- Innovations in natural products towards (potential) end-users (wood construction, drugs, medicines and cosmetics, energy, textile, food, inorganic chemistry, etc.);
- Improved / scaled-up industrial symbiosis though better valorisation of side streams (and their spin-off products) in the tree, wood and timber value chain such as wood chips, tree bark, saw dust, bioethanol, lignin, turpentine, CO_2, bio-composites and bioplastics, etc.;
- Upscale of (existing and new) solutions for water treatment and recycling (in the tree, wood and timber value chain).

This action has been selected because it is thematically **relevant and beneficial for all seven ENF regions**, and it combines capabilities smartly. While the action will be focused on a specific value chain, it is designed to be replicable and scalable to many other value chains and domains. Starting from the analysis of the specific economic transformation challenges faced by the ENF regions, the action will mainly focus on the transition to a low carbon and circular economy, while broadening innovation and innovation diffusion to a large spectrum of industrial activities and sectors and promoting entrepreneurship and private sector mobilisation.

The voucher system will target **collaborative projects** involving **direct beneficiaries** who aim to co-develop together with **service-provider(s**) a workable solution for a (previously identified) **end-user**, intending to increase the technological and market maturity of their solution beyond TRL 6. The voucher system will help **direct beneficiary** to make better use of inter-regionally connected **service providers** to deploy innovative solutions i**n the tree, wood and timber value chain**.

The tree, wood and timber value chain in ENF regions consists of few large global companies representing 90% of export revenues and many SMEs operating as subcontractors. However, for SMEs it is challenging to be able to provide their solutions to large companies and be part of their solution provider network (this is also valid for many other value chains in ENF regions such as machinery, drugs/medicine and cosmetics). In summary, the additionally will be four-fold:

1. foster support mechanisms that are currently under-utilized by direct beneficiaries in ENF regions;
2. fostering wider-based and more disruptive innovations brought into existing value chains by new actors (new to the value chain);
3. bringing direct beneficiaries, service providers and (large) end-users together, while these actors are not used to collaborate before (outside their existing supply chain) when it comes to innovation development;
4. to develop new policy approaches in a coherent and coordinate way between ENF regions.

The action is tightly related to the East and North Finland industrial transition Smart Specialisation Strategy 2019-2023.[2]

[2] https://issuu.com/ip-suomi.elmo/docs/elmo-strategy_english_web

2.2 Description of the HIA

ENF regions are facing four common major industrial challenges:

1. Isolation, fragmentation and lack of critical mass (sparsely populated, limited or negative population growth, long distances etc.);
2. Abundant and rich but under-valorised natural capital;
3. Lack of innovation in key industrial value chains, in particular industrial demonstration and upscale;
4. Under-developed 'joint policy for industrial transition'.

In this context, the HIA will be mainly focussing on the **transition to a low carbon and circular economy**, while **broadening innovation and innovation diffusion** to a large spectrum of industrial activities and sectors and **promoting entrepreneurship and private sector mobilisation**.

The key rationale for intervention is **to develop, test and deploy new approaches to better interconnect the regions and regional stakeholders** in a complementary way to reach the critical mass needed for a better industrial valorisation of their natural resources and to speed up industrial innovation and transition, while delivering new policy tools.

The general objectives of the HIA are focusing on t**he digitisation and circular economy in the tree, wood and timber value chain.** This action was selected as it is thematically relevant and beneficial for all seven ENF regions, while combining smartly each other's capabilities and provides good testing ground for HIA. While the action will be focused on a specific value chain, it will be designed to be replicable and scalable to many other value chains and domains.

The **specific objectives** of the HIA are organised according the following general objectives:

General objective I: Increase competitiveness, global resilience & attractiveness of domestic industrial activities and value chains. Five specific objectives are:

- Contribute to the upgrade of the Finnish forestry value chain, by e.g. improved automation and digitisation of (some of) its segments;
- Support the deployment of new digital solutions for e.g. storing, sharing & bundling of side-streams, real-time monitoring of side streams and forestry biomass, Artificial Intelligence (AI) applied to harvesting and logging etc.
- Speed up the innovation of natural products towards (potential) end-users (wood construction, drugs, medicines and cosmetics, energy, textile, food, inorganic chemistry etc.);
- Contribute to stronger industrial symbiosis through better valorisation of side streams (and their spin-off products) such as wood chips, tree bark, saw dust, bioethanol, lignin, turpentine, CO_2, bio-composites and bioplastics etc.;
- Facilitate the upscale of (existing and new) solutions for water treatment and recycling in the tree, wood and timber value chain.

General objective II: Improve the cross-regional inter-connectedness between ecosystems, clusters and their actors, including industrial companies. Three specific objectives are:

- Set-up of a coordination group between cluster-like actors within ENF regions;
- Develop a common vision and shared intelligence on challenges and opportunities, including exchange of information, data and mappings;
- Develop coherent and coordinated support system towards industrial companies, e.g. facilitating access to the research and innovation capacity.

General objective III: Improve the division of labour and connection between innovation infrastructures, as well as their access by industry. Three specific objectives are:

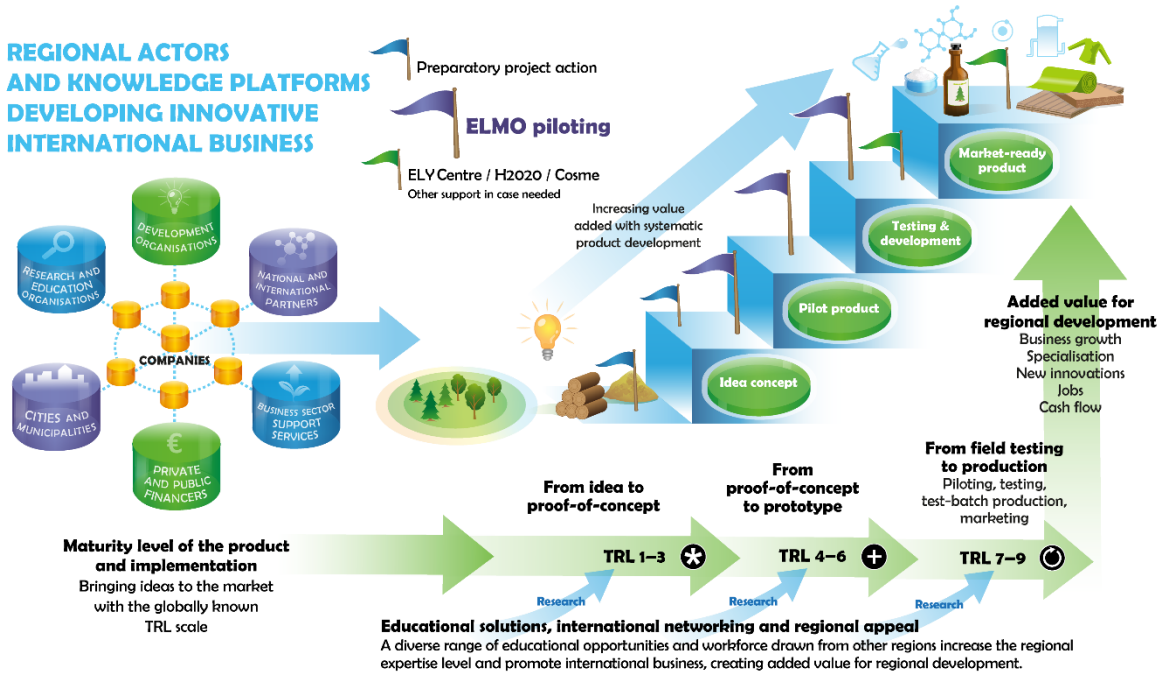
- Exchange of information on activities/projects/technologies between innovation infrastructures;
- Improvement of visibility in the activities of the innovation infrastructures;
- Facilitate smooth interaction between innovation infrastructures and industry.

2.3 HIA funding conditions and scheme

HIA is seeking applications stimulating digitisation and circular economy in the tree, wood and timber value chain, including for instance:

- Improved automation and digitisation of (segments of) the value chain (advanced manufacturing);
- New smart, digital solutions (new sensors, real-time monitoring of forestry biomass, digital platform for sharing and bundling of side-streams, AI applied to harvesting and logging, etc.);
- Innovations in natural products towards (potential) end-users (wood construction, drugs, medicines and cosmetics, energy, textile, food, inorganic chemistry, etc.);
- Improved / scaled-up industrial symbiosis through better valorisation of side streams (and their spin-off products) such as wood chips, tree bark, saw dust, bioethanol, lignin, turpentine, CO_2, bio-composites and bioplastics, etc.;
- Upscale of (existing and new) solutions for water treatment and recycling.

The support of the HIA will be in the form of a voucher targeted towards collaborative projects of one or more direct beneficiaries who aim to co-develop together with a service provider a workable solution for an end-user, intending to **increase the technological and market maturity of their solution beyond TRL 6**. The voucher system will help direct beneficiaries make better use of inter-regionally connected Research and Innovation Infrastructures to deploy innovative solutions in the tree, wood and timber value chain. HIA applications should be involving actors from different ENF regions.



The focus is on new or better solution(s) for a specific end-user, in the real environment (somewhere in ENF regions, but can be upscaled later on and exported). The action targets industrial demonstration projects, with a proof-of-concept and perhaps even a prototype, but further development and refinement / testing is needed in order for the direct beneficiary to validate the prototype in the industrial environment of specific end-users. **Vouchers to service providers will allow companies to investigate the feasibility and to do some first testing**. If this is successful, the voucher could lead to a 'substantial development project' for further upscale and next level funding. Once the solution is successfully tested, it can be taken up by the end-users and replicated. A typical project funded under this action could involve the following activities:

- Understanding the technical requirements and/or industrial challenges of the end-user;
- Identifying partners;
- Investigating the technical feasibility and cost-effectiveness of the targeted innovative solution;
- Carrying out initial testing;
- Defining detailed roadmap, operations and business plan for full upscale.

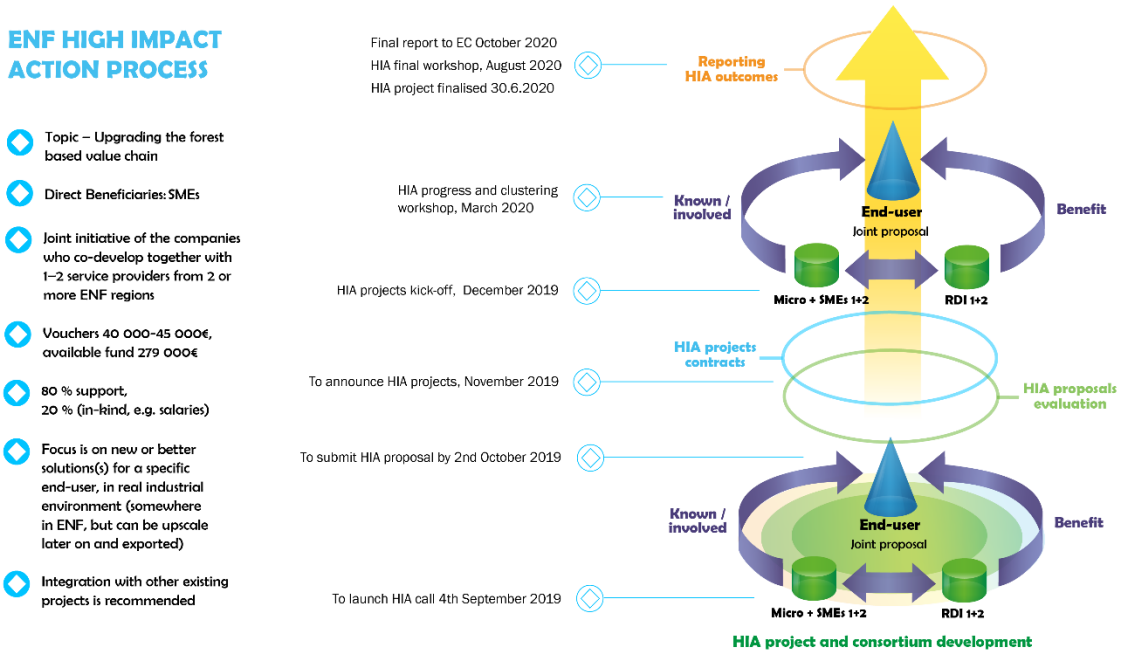
Funding scheme

This High Impact Action is made possible thanks to funding from the European Commission. The execution of the High Impact Action and the associated vouchers is subject to the signature of the grant agreement with the European Commission.

HIA funding will be in the form of a voucher dedicated to the one or more direct beneficiaries. The amount of the voucher can be between 40 000 - 45 000€ each and six or seven vouchers will be granted.

Each voucher covers up to 80% of the total costs. In addition, a minimum of 20% private own contribution is needed, which can be in-kind salaries but no other in-kind funding. **The proposed HIA project can last up to 30.6.2020.**

Awarded consortiums will be paid pre-financing max 30%, interim payment 30% after progress reporting and final payment after final delivery of the project results. Payment practises will be further elaborated in contracting process.



3 / HIA call practical procedure

The HIA call is a one-step call, that is open for four weeks from its launch in the call specific website elmoenf.eu/hia or elmo-enf.eu/hia

HIA Guide for applicants, application template and FAQ (Frequently Asked Questions) are all available in the call specific website elmoenf.eu/faq or elmo-enf.eu/faq

Potential applicants can send questions in the relation of HIA call via email to **elmo@lapinliitto.fi**. All questions sent latest 25th September 2019 shall be replied to within two days of their arrival. All questions and answers will be published in the website FAQ section. All applicants are recommended to check the FAQ regularly. All questions must be posed in English. Only questions sent in English will receive a reply.

3.1 Eligibility conditions

Each proposal has to fulfil all technical eligibility conditions listed below in order to be evaluated by the HIA call expert panel. The technical eligibility conditions include the following points:

- The consortium is composed of at least three legal entities based in at least two different ENF regions.
- One of the participating entities shall act as a Lead Partner.
- The direct beneficiary must have its home location in an ENF region. The service provider must have its home location or an office located in an ENF region.
- At least one of these entities is a direct beneficiary.
- The proposal is signed by the legal representative of the l, and has been submitted via email to **hia@lapinliitto.fi** by the given **deadline of 02.10.2019 16.00 (Helsinki Time).** Once the proposal is submitted, the applicant will receive a notification about the proposal registration.

- Proposals must be written in English following the given structure with a maximum of **12 pages including a cover page and index**. (Annex 1).
- All consortium members declare not to be an "undertaking in difficulty". The definition is given in article 2.2 of the Communication from the European Commission on Guidelines on State aid for rescuing and restructuring non-financial undertakings in difficulty (p.9 of this document: http://ec.europa.eu/competition/state_aid/legislation/rescue_resctructuring_communication_en.pdf).
- The Declaration of Honour is duly signed. The beneficiaries must certify that all information provided is correct. They must also be completely committed to participate in the project that they are submitting and comply with the eligibility criteria. The declaration of honour also states that this very same project proposal does not and will not receive funds elsewhere. (Annex 2)
- Regarding ethical compliance: applications that contravene ethical principles or any applicable legislation, or which do not fulfil the conditions set out in Decision No 2013/743/EU, which will serve as a reference document for this call, may be excluded from the evaluation, selection and award procedures at any time.

NOTE ALSO, THAT

- Proposals not fulfilling the eligibility conditions listed above will not be taken into consideration.
- Double funding of activities included into HIA application is not allowed.
- For profit organisations (SME's) can only participate to one winning HIA pilot consortium. The number of winning HIA pilot consortiums for non-profit organisations (i.e. RDI organisations) is not limited.

3.2 How to apply

The HIA Open Call will be launched 4th September and closed 2nd October at 16:00 o'clock.

- All practical information about the pilot and how to apply is available on the website from the 4th September 2019.
- Regular checking of the FAQ is recommended to all interested parties. Questions can be sent via email to elmo@lapinliitto.fi. Only questions sent latest 25th September before 16.00hr (Helsinki time) will receive a reply. All questions and answers will be published in the FAQ section of the webpage.
- Applications must be signed and submitted by the lead partner, who will also declare the consent of other consortium members' participation. A Power of Attorney or Consortium Agreement are not mandatory but allowed. Letters of commitment to the consortium are not mandatory during the application process either.

Main steps on how to apply:

- Get familiar with the procedure and download the HIA application form with annexes.
- Check your application's compliance with the eligibility criteria for participation to the HIA.
- Complete the application in English and send it as a PDF to hia@lapinliitto.fi before 2nd of October 2019 at 16.00 o'clock. NOTE that the application has to be signed by an authorized representative (the person who has the right on behalf of the organisation to sign documents) of the Lead Partner.
- Once your proposal is received, an automatic confirmation email will be sent to acknowledge the submission. Please save the confirmation email, as it can be used as a proof of submission.

4 / Evaluation of the High Impact Action applications

4.1 Evaluation process

The applications for the evaluation have to pass the **technical eligibility conditions listed in section 3.1 of the HIA guide**. Technical eligibility of the proposals will be checked by the Regional Council of Lapland.

HIA proposals will be evaluated by **the evaluation panel** consisting of five experts and a secretariat:

- 2 representatives from Centre of Economic Development, Transport and the Environments (ELY-keskus) from ENF region
- 2 representatives from the Regional Councils of the ENF region
- 1 AMI expert

Evaluation panel members from ENF region Regional Councils shall be nominated by the ENF region governors and members from the ENF region Centre of Economic Development, Transport and the Environments shall be nominated by the directors of the centres.

In case of a possible conflict of interest or a lack of need of specific expertise of the nominated evaluation panel, the other public officials may be used as evaluators. All evaluators act under the same requirements and conditions. Use of other evaluators shall be decided upon by the panel.

The evaluation panel is chaired by the AMI expert, who will guide the process and ensure internal coherence. In addition, the panel will nominate the secretary from Regional Council of Lapland.

Each member of the evaluation panel will have to sign a confidentiality and conflict of interest declaration prior to handling the proposals. The role of the chairman of the evaluation panel is to oversee the proper execution of the evaluation process and guarantee its coherence, fairness and transparency. In particular, the role of the Evaluation panel is to:

- Assure that no conflict of interest, fraud, or double funding during the evaluation process takes place.
- Assure that the maximum amount that a direct beneficiary receives is limited to 45 000€ or less.
- Provide information about possible ethical considerations.

An evaluation template will be used for the evaluation of each received application and will be signed by each evaluator. The evaluation panel will develop a ranking list according to the weighted scores and will communicate the results to the Regional Council of Lapland through the chair of the evaluation panel.

The Regional Council of Lapland shall inform all applicants about the results of the evaluation and deliver administrative decisions with instructions about how to appeal the decision.

4.2 Evaluation criteria

Before the evaluation of the eligible proposals, a technical checking will be carried out assessing:

i. Whether the proposal is in line (or not) with the objectives of the HIA call (see sections 2.1 and 2.2);

ii. Whether the proposal contains sufficient information to be evaluated.

If one or both of those two criteria are not met, the eligible proposal will not be evaluated.

The evaluation of the proposals will be based on pre-defined criteria based on the following evaluation grid consisting of a quantitative score for each evaluation criteria (see below).

The following criteria will be applied for the evaluation of the proposals:

	Criteria	**Weight**	**Score**				
			1	2	3	4	5
1	**Fit with the HIA priorities**	20%					
	Proposal is in line with the HIA priorities and call challenges						
	Interregional and cross-sectorial approach						
2	**Excellence - Innovation of the idea**	30%					
	Feasibility of concept and methodology						
	Understanding of the competitive environment in which they will realise their idea						
	Coherence of the TRLs and scope with the type of proposal applied for						
	Innovativeness of the proposed solution						
3	**Potential Impact**	30%					
	Industrial and individual relevance						
	Credibility of targets for business						
	Effectiveness of the exploitation						
	Market opportunity						
4	**Implementation**	20%					
	Clear and realistic objectives						
	Soundness and the feasibility of the workplan						
	Team and competitiveness advantage						
	Operational capacity						
Total	**Total Score (weighted average)**	100%					

The marking scheme for applications will be as follows:

1	Very poor	Criteria is addressed in an unsatisfactory way
2	Poor	There are serious weaknesses related to the criterion in question
3	Fair	The criterion are addresses broadly, but there are important weaknesses that need to be corrected
4	Good	The criterion is addressed well although several improvements are possible
5	Excellent	All significant aspects of the criterion in question are addressed successfully. Any possible defect found is minor

5 / Administrative duties for the selected HIA projects

The six or seven applications having received the highest scores in evaluation shall be granted. In case two or more applications are scored equally, geographic spread of actors and projects amongst ENF regions will be considered as additional discriminatory criterion. If this additional discriminatory criterion needs to be applied, the ENF Region governors will give their joint recommendation, which the Reginal Council of Lapland shall take into consideration in the final decision-making process.

Selected HIA applications will become **HIA sub-grantees**. Lead partners will be informed by email and results will be also published in the website as soon as the evaluation panel has completed its work.

The Regional Council of Lapland shall give an administrative decision to all lead partners, informing whether their proposals have or have not been granted. Decisions of the Regional Council of Lapland may be appealed according to the provisions of the Administrative Procedure Act (434/2003). More detailed instructions for appealing shall be included into the decision.

Sub-Grant agreement preparation process

Selected sub-grantees will be requested to sign a Sub-Grant Agreement. The main objective of the Sub-Grant Agreement preparation is to validate financial and technical operational capacity of the consortium, and to establish some minimum ground rules for receiving support from the HIA.

Sub-grantees will have to submit proof of:

- Legal existence: registration certificate (of the Lead Partner and Partner organisations), tax certificates
- Financial statements
- Bank Account information (Financial Identification Form)
- Agreed partnership

All documentation for grant preparation is to be submitted electronically via email. Sub-grantees will be instructed about the process when they are notified about the selection.

A Kick-off meeting for all sub-grantees will be organised in Rovaniemi in December 2019.