Vanguard Initiative
New growth through smart specialisation

Aligning implementation of RIS3 and H2020
Funding across research priorities

Brussels, 9 March 2017
What is the Vanguard Initiative?

Network of 30 regions in Europe striving for modernisation, stronger competitiveness and internationalisation of Europe’s industry.
Key features of the Vanguard Initiative

A. Strong political commitment and ambition
B. Interregional cooperation based on S3
C. Multilevel: collaboration between regional authorities, clusters, business, knowledge institutes
D. Speed up the market uptake of innovative technologies/ solutions
E. Exploring and facilitating Public-Private investment and co-funding possibilities
F. Structured dialogue with EU institutions
G. Bottom up
VI Methodology – 4 step approach

**learn**
- developing a scoping paper
- mapping questionnaire
- Identify lead regions and actors

**connect**
- matching events for complementary partners
- developing demonstration cases

**demonstrate**
- networked demonstration
- pilot lines and first-of-a-kind factories

**commercialise**
- launch of new ventures and start-ups
- new value chains (TRL 9)

**upscale**

**Industry Inspired**

**Industry Driven**

**Industry Owned**
Features of the Pilot Projects

- **What:** To explore opportunities for developing **interregional joint-demonstration and co investment**
- **Why:** to **accelerate industrial uptake of innovative solutions** and market development for existing and emerging industries with competitive and value added products
- **How:** Developing concrete **demo cases** within the pilots
- **Who:** **Clusters**, mobilising companies and knowledge institutes
- **Validation criteria for democases:**
  - Demonstration projects (>TRL 5)
  - Business involvement
  - European dimension of the value chain
  - Added-value of joint demonstration
# Five Pilot Projects

<table>
<thead>
<tr>
<th>Pilot Project</th>
<th>Lead regions</th>
<th>Democases</th>
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| 1 | Bio - economy Interregional cooperation on innovative use of non - food biomass Lombardy Randstad Region | • Biobased aromatics  
• Lignocellulose refinery: European value chains for second-generation sugar and lignin  
• Turning (waste)gas into value  
• Biogas beyond energy  
• Aviation biofuel  
• High value food and feed from agro-food waste |
| 2 | Efficient and sustainable manufacturing Catalonia Lombardy | • De- and remanufacturing  
• Adaptive & intelligent manufacturing  
• Advanced surface & coating manufacturing  
• Digital and virtual manufacturing  
• Energy and environmentally efficient manufacturing |
## Five Pilot Projects

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| 3 High performance production through 3D-printing                           | Flanders Norte South-Netherlands | • Multi-materials components by hybrid 3D-printing manufacturing.  
• Metal products 3D-Printing for automotive components, tools and moulds for large (>2500 mm), medium and small complex parts  
• Machine, tooling and complex parts  
• Additive subtractive high precision & high finish pilot production hubs.  
• Customised consumer goods in creative industries  
• Adding a dimension to 2D-printed textiles  
• 3D-printing in health-care  
• 3D-printed smart bike                                                        |
| 4 Advanced manufacturing for energy-related applications in harsh environments | Basque Country Scotland    | • Real condition testing of new materials for offshore  
• Cost-effective power transfer  
• Optimised corrosion management – including modelling, sensing and design   |
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<td>Skåne Tampere</td>
<td>• Nano wires for ICT and energy applications</td>
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<td></td>
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<td>• Manufacturing nano-enabled microsystems</td>
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<td></td>
<td></td>
<td>• Medtech</td>
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<td></td>
<td>• Printed nano-electronics: integrated energy harvesting/ cross-technology</td>
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<tr>
<td></td>
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<td>application platform</td>
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<td>• Industrial pilot production of nanomaterials establishing new value</td>
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It’s all about joint demonstration

Scope for synergies with H202: aligning various RIS3 through inter-regional cooperation can develop critical mass combining forces and complementing capacities to tackle major industrial challenges.
3DP Case: ‘Reducing weight in automotive, machinery and aerospace applications’ via 3D-Printed hybrid components
**Bottleneck: Funding & Investment**

- VI DemoCases common objectives
  - establish shared facilities for demonstration of new technologies
  - facilitate access to shared facilities
  - lower technology uncertainty, risks and costs
  - stimulate industrial replication & upscale (hence market uptake)
- each DemoCase =
  - combination of complementary demonstration facilities
  - group(s) of companies accessing infrastructure (TRL6-8)
  - industrial replication & upscale (if the above is successful) (TRL8-9)
- 3 types of DemoCases
  - connecting existing infrastructures
  - building brand new demonstration infrastructure
  - connect & upgrade existing infrastructure (hybrid format)
Different Investment Needs

Demonstration / upscaling through:

- Connecting existing facilities
- Creating / building new facilities

Category 1 Demo-Cases
« Connecting what already exists »
Ca. 50% of VI demo-cases
0.5-10€ Mio

Category 2 Demo-Cases
10% to 20% of VI demo-cases
+/- 10-50€ Mio

Category 3 Demo-Cases
« Connecting & upgrading what already exists »
30% to 40% of VI demo-cases
+/- 50-200€ Mio (poss. even higher …)

Cat 2 Demo-Cases
« Building & connecting new demo facilities »
Basic Demonstration Infrastructures – Initial Costs related to the setting up of the infrastructures and platform

Projects-related activities (within the platform; TRL 5-7/8) - Operating costs

Replication – Indus. Upscale (TRL8/9) 1
Replication – Indus. Upscale (TRL 8/9) 2
Replication – Indus. Upscale (TRL 8/9) 3
Replication – Indus. Upscale (TRL 8/9) 4
Etc.

Private investments, public (EIB-like) loans

Revenues generated from Replication/Industrial upscale and production

Public Support
(100% coverage ‘non-profitable top’ through public funds, structural)
(e.g. 50% subs, project based)
(Repayable Loans, Bankable Business Plan)

Regional, national and EU Subsidies
Public Subsidies and private co-investments

Layer 1 (to some extent Layer 2 as well) contains « non-profitable top » (hence the subsidies)
Layers 2 & 3 can’t be functioning if « top » not financially secured (no bankable plan !)
Layers inter-dependent; smooth flow between them key!

Notes:
• Layer 1 (to some extent Layer 2 as well) contains « non-profitable top » (hence the subsidies)
• Layers 2 & 3 can’t be functioning if « top » not financially secured (no bankable plan !)
• Layers inter-dependent; smooth flow between them key!
# Crossing Investment Needs and 3-Layers’ Funding Model

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New instruments (e.g. Energy Demo Pilot under InnovFin) available but more convergence needed
Funding & Investment Needs

• VI demo-cases face common problems in accessing centrally-managed EU funding to support their ambitions: Lack of relevant calls, Highly competitive, Complexity and uncertainty.

Work in progress / New avenues to explore:

• Vanguard Initiative Fund for inter-regional demonstration.
• Voucher system for SME’s engaged in Vanguard pilots
• Thematic extension of the InnovFin Energy Demo Projects to cover broader industrial modernisation activities.
• An Interreg Programme for the EU-28.
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Conclusions

• VI is a clear example of the power of interregional cooperation and of the added value that can be achieved if regional innovation ecosystems are connected together.

• Developing co-investment projects requires a new design of projects, combining a regional development perspective with a collaborative one, combining the development of regional assets with openness and collaboration with European partners.

• New management rules must be developed to allow mixed funding of innovative projects from different sources (public, private, EU, national, regional)

• EC should support the implementation of the S3 strategies anchored in the regions but linked to EU priorities and deployed across Europe. This will require breaking down the traditional silos.
Thank you for your attention!

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