



Nanotechnology and Advanced Materials OPEN INNOVATION HUBS

**European policy and initiatives on nanotechnology and
advanced materials**

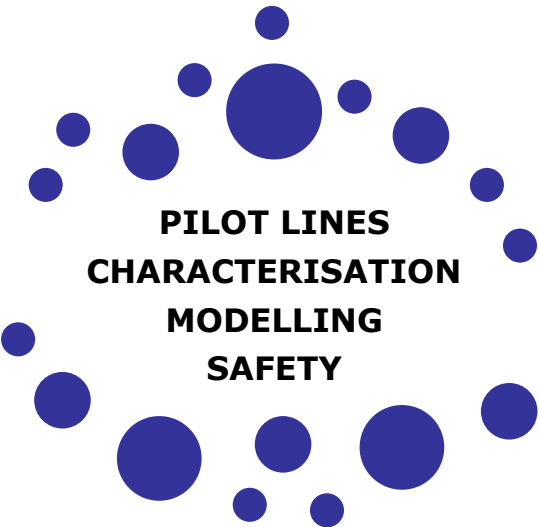
29 March 2017

**Hans Hartmann Pedersen,
Programme Officer
European Commission**

**Industrial
Modernisation**

**Open
Innovation**

**Innovation
Ecosystems**



**PILOT LINES
CHARACTERISATION
MODELLING
SAFETY**

**ACCELERATING
PHYSICAL
INNOVATION
for
MATERIALS Industry**

In the two KETs:
**Nanotechnologies and
Advanced Materials**

**OPEN
INNOVATION
HUBS**

Piloting and upscaling facilities

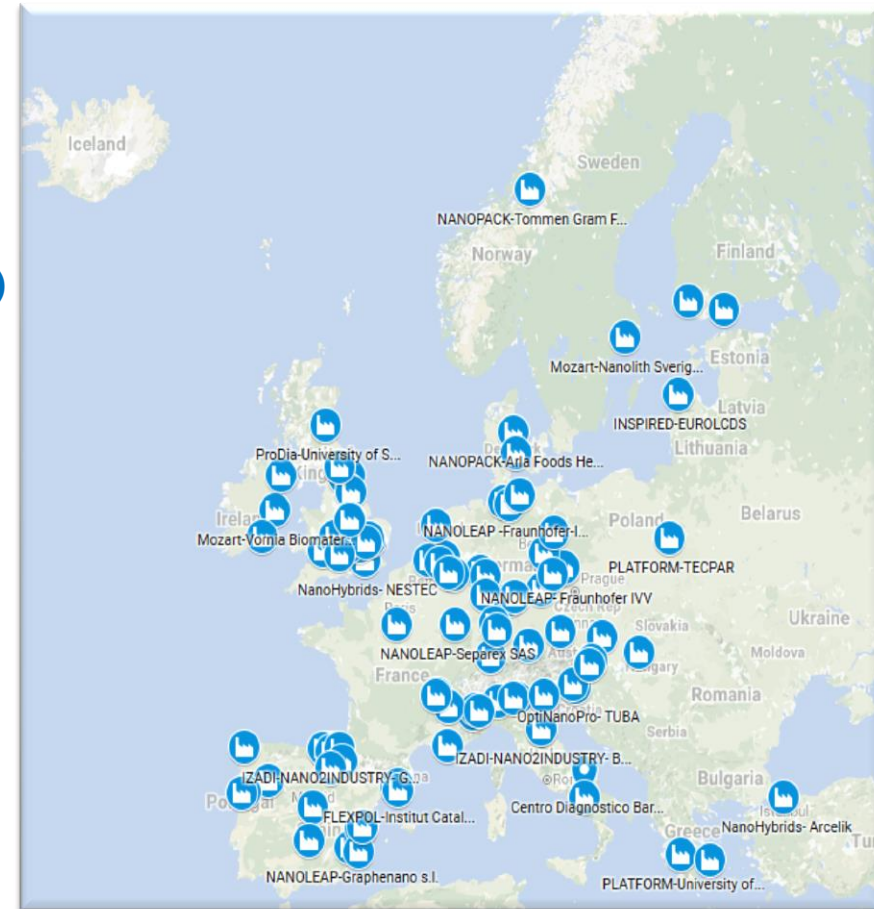
Horizon 2020:

- **EC Contribution 150 M€**
- **29 Pilot Line Projects**
- **25 Countries (20EU, IL, TR, RU, NO, CH)**
- **>70 Pilot Lines**
- **>30 Regions involved**

**Nano
Materials**

**Nano
Manufacturing**

**Health/
Personal
Care**



- **EUROPEAN PILOT PRODUCTION NETWORK (EPPN)**



NanoMaterials:

1. *Open access pilot lines for cost-effective nanocomposites*
2. *Integration of novel nanomaterials into existing production lines*
3. *Manufacturing and control of nanoporous materials*
4. *Industrial-scale production of nanomaterials for printing applications*
5. *Manufacturing of materials with customized thermal/electrical conductivity properties*

NanoManufacturing:

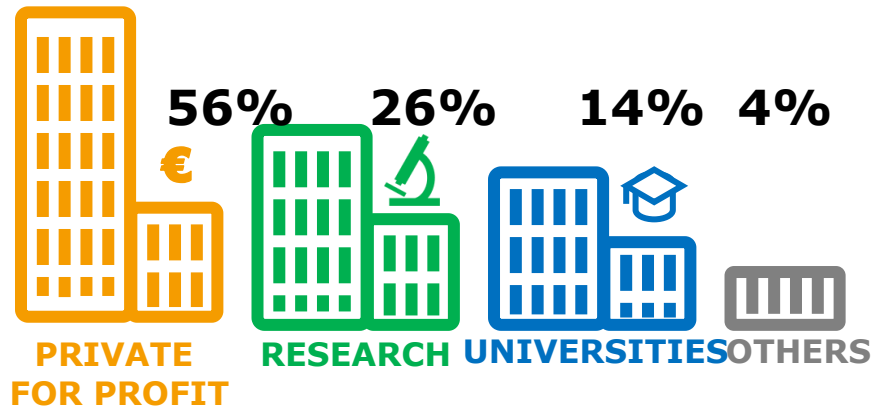
1. *High definition printing of multifunctional materials*
2. *Additive manufacturing for table-top nanofactories*
3. *Manufacturing of Nanotextured surfaces with mechanically enhanced properties*
4. *3D printed and/or injection moulded polymeric or ceramic microfluidic MEMS*
5. *Paper-based electronics*

Health/Personal Care:

1. *Scale-up of nanopharmaceuticals production*
2. *Novel nanomatrices and nanocapsules*
3. *Nanostructured Antimicrobial Surfaces using Advanced Nanosurface Functionalization Technologies*

Piloting and upscaling facilities

328 beneficiaries



EARTO RTOs	Participation (Coordination)
FRAUNHOFER	10 (1)
TECNALIA	5 (2)
JOANNEUM RESEARCH	4 (2)
CEA	4 (1)
VTT	3 (0)
TNO	2 (1)
LEITAT	2 (1)
ARMINES	1 (0)
DHI	1 (0)
D'APPOLONIA	1 (1)
TECHNOLOGY PARTNERS FOUNDATION	1 (0)
IFP Energies Nouvelles	1 (0)
PROFACTOR GMBH	1 (0)
SINTEF	1 (1)
TWI	1 (0)
EURECAT	1 (0)

Enablers for Innovation Ecosystems

	Materials Characterisation	Materials Modelling	Safety and Risks Governance
Horizon 2020 NMBP investment	Spread along all projects	42 M€	60 M€
Horizontal platforms	European Materials Characterisation Council EMCC	European Materials Modelling Council EMMC	NanoSafety Cluster

Open Innovation Hubs Tasks

Open access to facilities and services for design, development, testing, and upscaling materials and nanotechnologies for new products

Demonstration in the relevant industrial environments

Show-casing technologies with user industry in cross border applications

Facilitate access of European SMEs along product supply chains

Identification and assessment of potential regulatory, economic and technical barriers

Engagement of stakeholders across the EU and the Associated Countries

Open Innovation Hubs Impact

Open and upgraded facilities at the EU level

Reduced services access costs for companies using the hubs

Improved industrial productivity

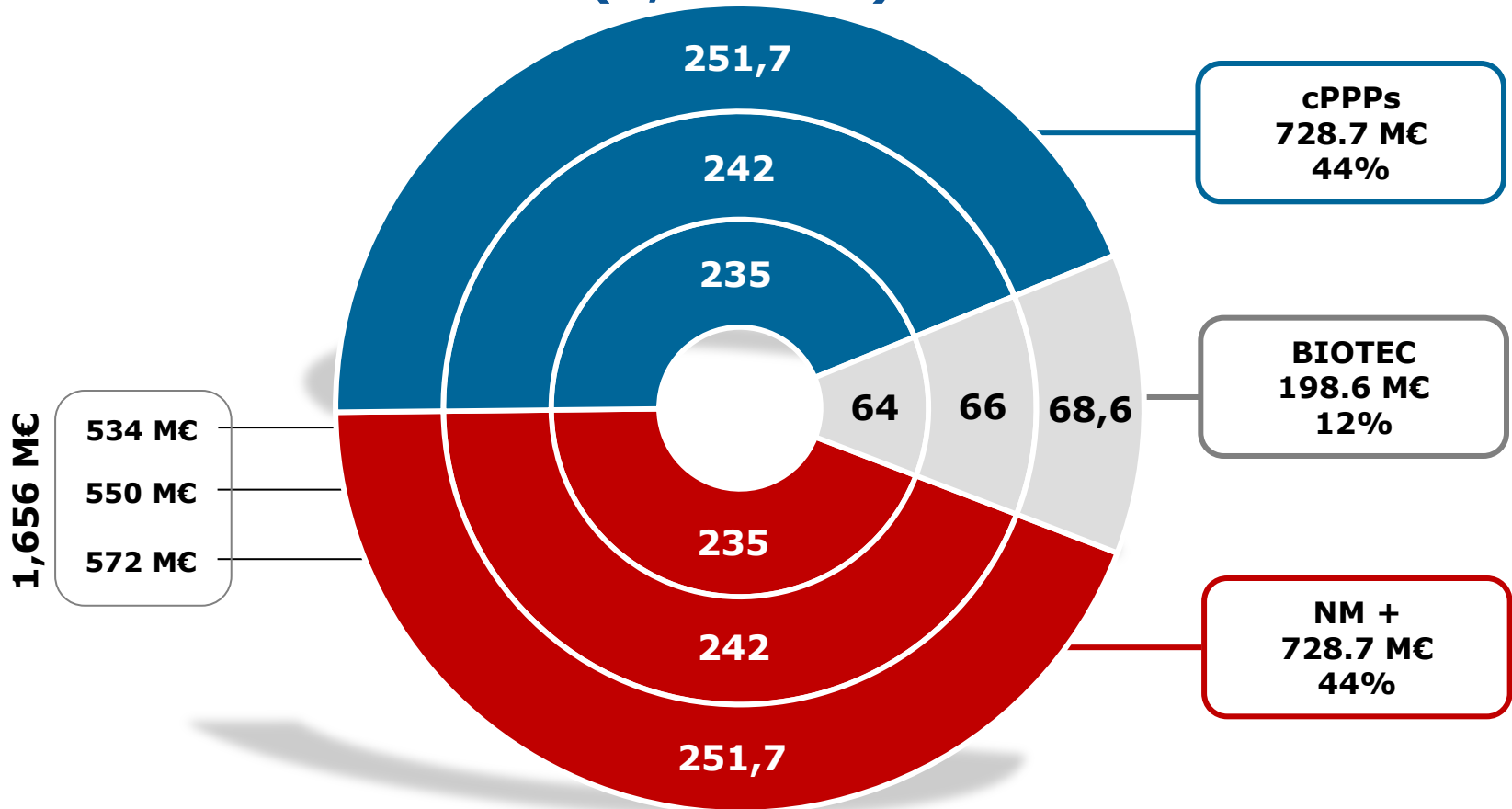
Accelerated innovation in the specific domain

Increased access to finance (for SMEs in particular) for investing in these materials or in applications using them

20% increase in SMEs access to hubs' services and increased access to finance for investing in these materials or in applications using them.

NMBP BUDGET 2018-2020

(1,656 M€)



Continued focus on Upscaling

- *Focus on SME Upscaling and Business Implementation in the area of Nanotechnology and Advanced Materials!*
- *Widen the pilot project approach by adding requirement for openness, networking, horizontal services and SME 'pilot upscaling cases' for validation and technology transfer.*
- *Provide innovation support to SMEs through Regional innovation portals and **Networking** activities within, between and external to the upscaling facilities.*



Technology Upscaling and Innovation

- Technological Upscaling Services to SMEs:
- Pilot and Demonstration Facilities and..
- Horizontal services
 - Design and modelling!
 - Characterisation, monitoring and control!
 - Safety and regulatory expertise!
 - Digital technology!
 - Business planning?
 - Financing?
- Networked, Regionally visible and Accessible!

EuroNanoForum 2017

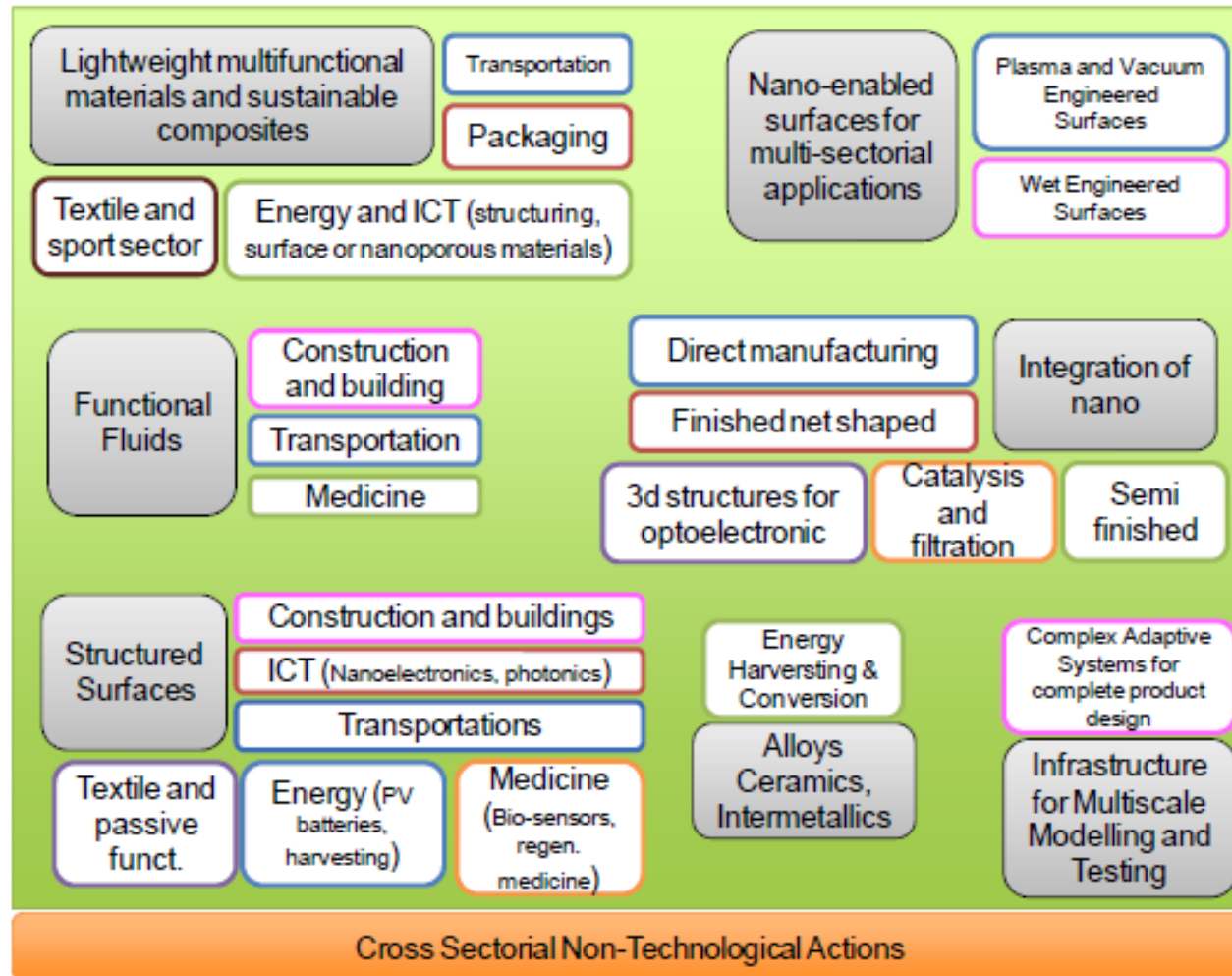
Strengthening the competitiveness of European manufacturing industries through nano and advanced materials technologies and open innovation

1000 Delegates | 3 Plenaries | 15 Sessions | 70+ confirmed speakers | 50 exhibitors

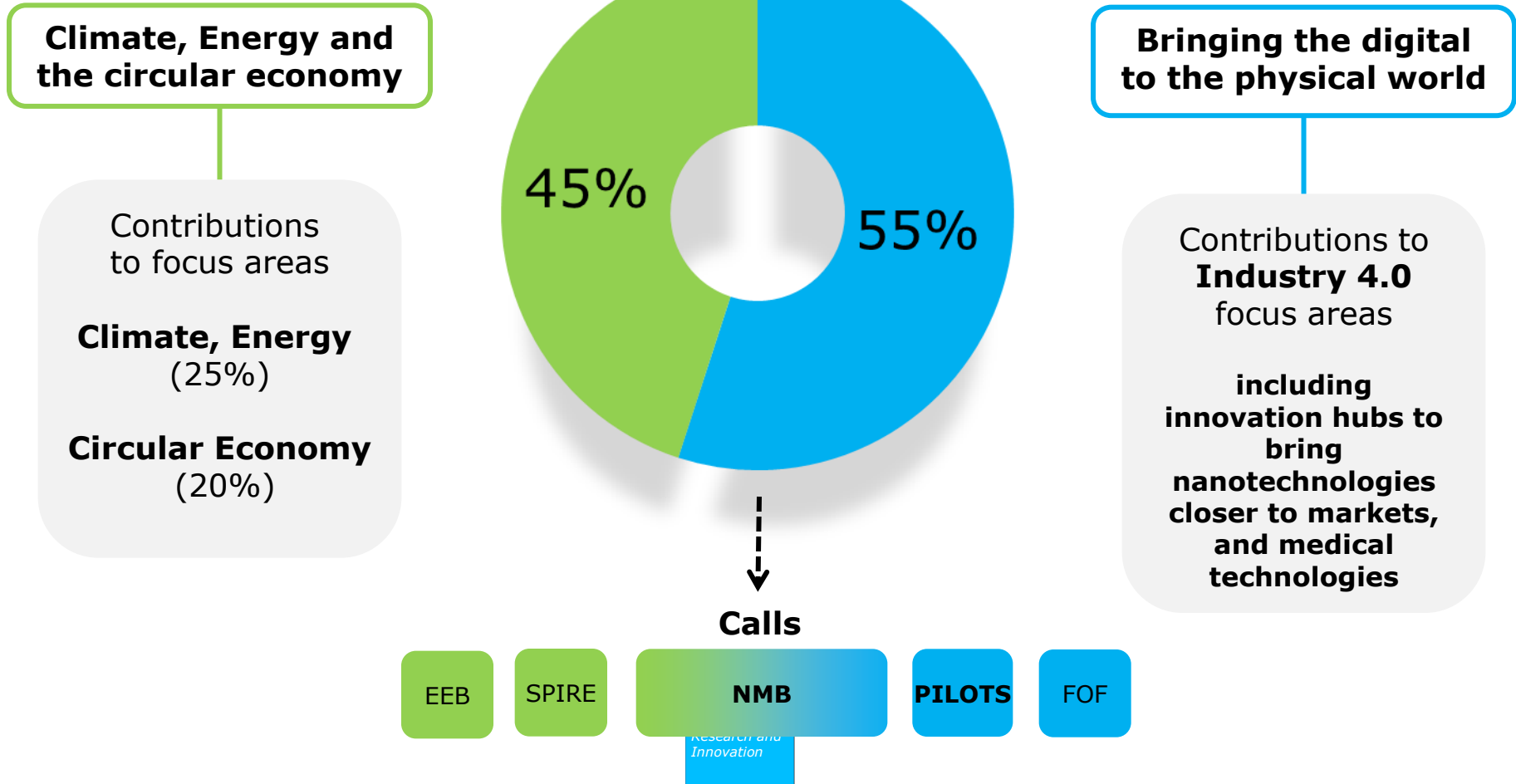
21 - 23 June 2017, Valletta, Malta

<http://euronanoforum2017.eu/>

Co-funded by the European Union's Horizon 2020 Programme



NMBP Main Priorities 2018-2020





NMBP Support Actions (CSAs)

European Pilot Production Network

The EPPN intend to cluster and coordinate pilot activities, help promote the pilot infrastructure and advisory services, support their business planning, facilitate access for SME's and start-ups, and support the development of innovation programmes and finance opportunities across H2020, regional and private sources. CSA starting this summer.

European Materials Characterisation Cluster

Currently active and waiting to have a support action started.

European Materials Modelling Council

Currently active and waiting to have a support action started.

All will contribute at European level to forming **European Technological Innovation Hubs.**

Networking w/ Horizontal Platforms

- European Materials Modelling Council EMMC
- European Materials Characterisation Council EMCC
- NanoSafety Platform
- Digital Enterprise Initiative - Digital Innovation Hubs DIH
- Finance and Business Support functions (Invest-Europe, EIB/EFSI (*European Investment Advisory Hub (EIAH)*), Regional funds/ERDF etc.)

Future perspectives – how to..

- create a European Upscaling and Innovation Ecosystem, networking KET providers and users!
- Be attractive to SMEs, regionally visible and accessible.
- addressing horizontal barriers
- ensure sustainability of the Ecosystems
 - providing neutral advise on technology, finance, business..
- strenghten EU, National and Regional initiatives
- NMBP-38: "Support for the enhancement of the impact of PILOT projects"
- 2018-20 Pilot and Upscaling Topics